The Builder.

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English Renaissance Architecture.

RENAISSANCE architecture in England, to which so much attention has been directed, and of which so many imitations have been made, since what one may call the decline and fall of the Gothic revival, is only one corner of the great architectural development which followed on the revival of learning. Its productions have never rivalled the refinement and stateliness of Italian Renaissance, or the richness of the French Renaissance. But it is especially interesting to us, not only as being our own, but because it arose and developed under various and to some extent conflicting influences, partly of circumstances and partly personal, with the result that it displays a greater variety of method and taste, in the course of its history, than is to be found in the architecture of the same period in any other country.

Mr. Blomfield, in the large book on the subject which he has recently completed,* and which has evidently been the work of some years of study, has aimed at giving both a history and a critical analysis of English Renaissance architecture, of the various forms which it assumed and the causes which acted upon it. We have various publications illustrating our Renaissance architecture; but the present work, though crowded with illustrations (of which the great majority are from the author's own sketches), is a great deal more than either a history or a book of examples; it is a philosophically written treatise going into the causes of things and the reasons for approving or disapproving of them; treating ancient examples of architecture from the point of view of abstract reasoning, and not as works claiming admiration and imitation on merely archæological grounds. Books dealing with the history and illustration of ancient architecture in this spirit are unfortunately not very numerous; one may be glad to welcome an important addition to the list; and no one, we think, can go through Mr. Blomfield's book, whether or not he agree with all the opinions expressed in it, without feeling that he has gained at all events a new and comprehensive classification of an intricate subject.

One distinction between the Renaissance in England and in continental countries is of course the later period of the start, naturally arising from the isolated position of this country in days when intercommunication was so much more slow and difficult than it is now, and perhaps partly from a conservative and insular clinging to our older national forms of architecture. Mr. Blomfield classifies the history of the subject under three main epochs; (1) the period of the Italian artists in England under Henry VIII.; (2) that of the English masons and builders, when architecture was carried out at the bidding or inspiration of wealthy *dilettanti*, who gave general orders and exhortations to masons and joiners who got details out of pattern-books—and in this period he includes also the work and influence of German and Flemish artists in England, which was prominent during the reign of Elizabeth; and (3) the period commencing with Inigo Jones and the actual study of Italian Renaissance architecture in a scholarly spirit. We should be disposed to add a fourth period, that of personal influence, which commenced with Wren and ended with the Adams. Mr. Blomfield attaches an immense importance, as we shall see, to the personal influence of Inigo Jones, and in one sense we agree with him. But we do not regard Jones as being so much an inventor in architectural design as Wren; he was rather concerned in showing how Palladian architecture might be correctly and properly adapted to English buildings, in a refined and scholarly form, in place of the rather crude performances of the English masons and the German carvers; he was no doubt an original genius of a high order, but so far as he had the opportunity of carrying out important buildings he subordinated his originality to Palladian principles. We quite concur with the author as to the power of handling and the sense of proportion shown in the Tuscan portico in Covent Garden; but still, that was the successful working out of a school ideal, not of an original conception. In his designs for masque scenery he probably showed a daring originality, to judge from some of the designs which have been preserved, but these were temporary structures. With Wren we come upon an architect who, with less of Italian refinement in design than Jones, showed an extraordinary capacity of personal invention in architecture, and erected many buildings of which it may be said that each, though carried out with the same class of detail as the rest, is a distinct and original architectural conception, owing nothing either in plan or general design to classic or Italian precedent. And from the time of Wren to the close of the Renaissance period in this country, we find a succession of prominent architects each of whom had his own independent way of treating classic materials. Hawksmoor, who was Wren's chief pupil and follower, was as original and inventive as Wren, as far as he had the chance of showing it; Vanbrugh, less varied, at all events unquestionably made his own architectural treatment, and a very marked and striking one; Gibbs and Chambers, though less original and in every way much smaller men, had their own methods; and Robert Adam, also a much lesser light than the great men of the seventeenth century, had enough originality to evolve a kind of style of his own, and enough personal power to impose it on a whole generation. If Mr. Blomfield takes a review of his own pages, we think he will recognise that there is this distinction—in the pre-Jones period it is a history and illustration of work done, of which it is difficult to name the architects; in the post-Jones period it is the history and illustration of the work of personal architects each with his special idiosyncrasy. He suggests indeed a fourth division of his subject—buildings which cannot be exactly identified either with Gothic or Renaissance, but represent "the continuous building tradition of the country." The kind of buildings to which he refers—mostly farmhouses and small country houses—are very interesting and in a sense peculiarly English, but we do not see what they have to do with English Renaissance architecture. They do not admit of being classified under the title of the book. Therefore we should amend the classification thus:—

1. The various isolated attempts of foreign workmen, mostly Italians, to introduce their own method of workmanship.

2. The efforts of half-instructed native builders, and of Flemish and German workmen.

* "A History of Renaissance Architecture in England, 1500-1800." By Reginald Blomfield, M.A. London Geo. Bell & Sons. 1897.

3. The mature Palladianism introduced by Inigo Jones.

4. Wren and the personal designers.

The first three classes are as the author puts them, the fourth we should subsitute for his fourth term. Inigo Jones undoubtedly prepared the way for Wren and his successors, but they worked in a different spirit from his.

Under his first head the author has collected a great deal of information as to the Italian artists who worked in England, and whose incursion was largely due to the taste and ambition of those two magnificent amateurs of art, Henry VIII. and Wolsey; but his main point in regard to them is that they were not architects and did not much influence the architectural development; they were employed on monuments or decorative adjuncts to buildings which still retained the Mediæval style; hence the curious and picturesque alliance of Renaissance decoration with Late Gothic detail. There could hardly be a better example of this than the ornament over the gateway at Montacute House (fig. 1),* in which the treatment of the coat-of-arms and the supporting figures is so exceedingly Italian in feeling, while the framework of the panel and all the other architectural features are distinctly Gothic. The retirement of the Italians after the death of Henry may, as the author suggests, have been in a great measure due to the fact that his expenditure had drawn in its train a re-action in favour of economy, partly for the excellent reason that there was no more money to spend. The author considers that the Germans took their place in Elizabeth's time. There are names enough extant of German artists employed in England at the time to give plenty of colour to this view; but we should suggest that a good deal of the work which Mr. Blomfield attributes to German hands—"the strapwork gables to the towers of Wollaton, . . . the shapes of men and women ending in balusters, all show the heavy hand, the merely mechanical instinct of the German workman," &c.—was really executed by English workmen influenced by German taste. The German invasion accounts for such details as the strapwork which became such a favourite form of ornament in the Elizabethan period, and ran such riot at Wollaton Hall; but the page of ornament which the author quotes from Vriese's "Architecture," though it may indicate the origin of some salient traits of Elizabethan ornamentation, has a very different appearance and feeling from anything that we are accustomed to see in actual execution in Elizabethan work, so that we are inclined to think the actual practical intervention of the Germans has been exaggerated.

In speaking of "The English Builders" the author is sceptical, like many other persons, as to John Thorpe's claims to many of the buildings often assigned to him, and in fact considers him as much an *ignis fatuus* as "John of Padua." He at any rate shows that the positive evidence connecting Thorpe's name with any but two or three buildings of secondary size and importance, is entirely wanting. Considering that both Kirby and Wollaton Hall have been confidently attributed to the mystic Thorpe, the reply is very obvious, that in those days it was hardly possible that the same man could have designed two buildings so radically dissimilar in their architectural treatment; and we are inclined to accept Mr. Blomfield's verdict, that Thorpe was probably only an example of those not very much educated master-builders or surveyors who took in Elizabeth's reign the place and functions of architect. We do not know why the author speaks so slightingly of Wollaton; the style, with its profusion of artificial ornament, is certainly not of the best, but we cannot agree that it is a building to be despised. Among the illustrations to the chapter on the English Builders we may take the sketch of the School and Almshouse, Corsham (fig. 2), though no name of architect or builder is suggested for it, because it is a good representation of that half-and-half Renaissance architecture which consists in affixing a decorative framework of Renaissance detail to the principal doorway, with no reference to anything else in the architectural design, which retains a naïve Late Gothic character. Our taste has got used to this kind of incongruity by force of habit, but if we were to stumble for the first time on a building so treated, it would probably strike us as very odd, and we should be tempted to think that the door decorations were a later facing to the entrance wing, not done at the same time as the entrance wing itself. It is impossible to judge of such a point except from the actual building, but the sketch seems to show that this whole wing, at all events, was built at one time. But this kind of thing was now to be superseded, and the mason-architects pushed on one side by a stronger hand.

Though the author brings forward plenty of evidence to show that, in the days immediately previous to Inigo Jones, there was no one employed on buildings whose function answered to that of architect as designer in the modern sense, he does not make use of this fact to prove that the architect is a pernicious person and the cause of the decline of architecture, as we have often heard of late. On the contrary, he introduces Inigo Jones in words which seem to point to him as the regenerator of our architecture:—

> "He returned to England filled with the very spirit of the great Italian artists of the Renaissance, and lifted the art of his country into an altogether different plane. The homely fancy, the lovable humility, as one might say, of its traditional art were laid aside; the art of this country was to be no longer an affair of happy instinct, but completely conscious, dependent upon scholarship almost as much as on capacity of design. Henceforward abstract thought, and imagination under rigid restraint, were to supersede the poetry of mediæval fancy."

We are so little accustomed to this tone in the writings of architects of the new school (with which we suppose we must class Mr. Blomfield) that one is rather taken by sur-

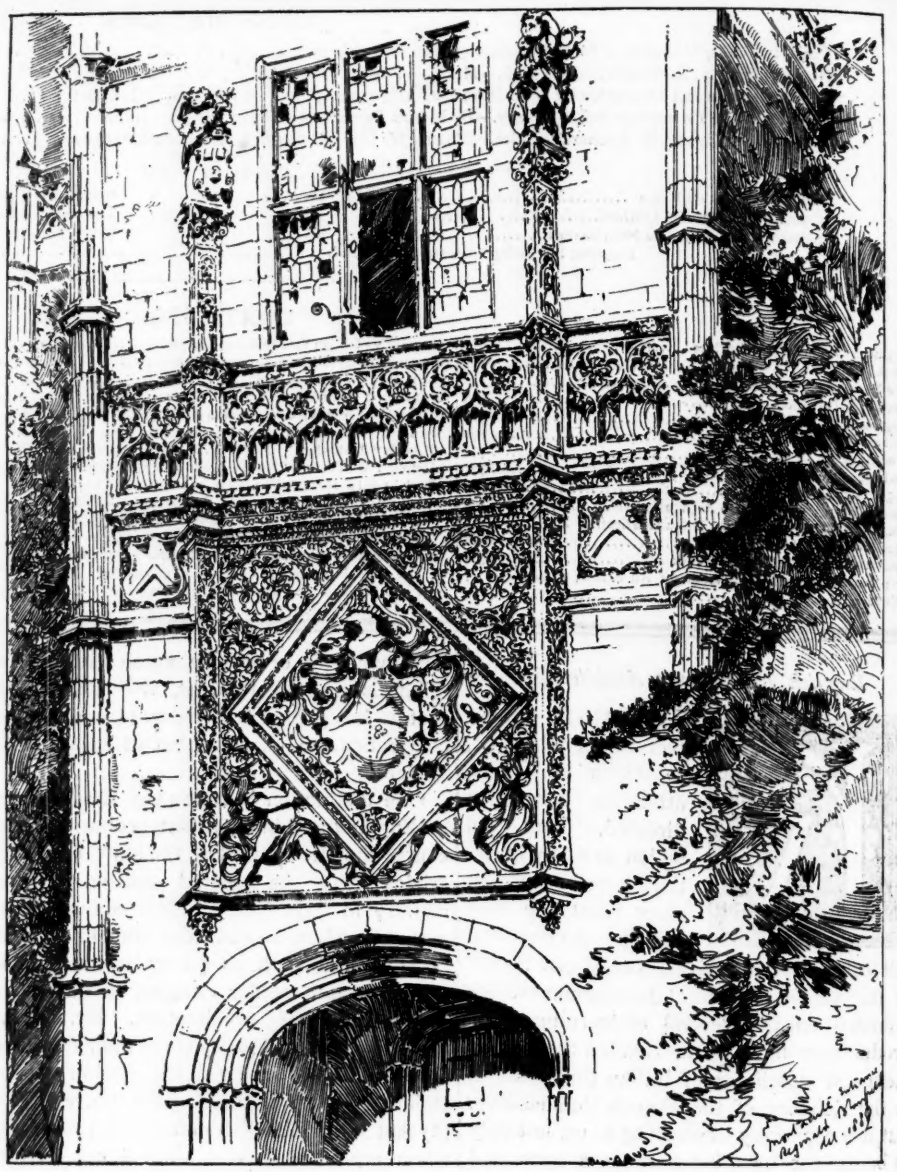


Fig. 1.—Gateway, Montacute House.

* The illustrations here given are not from the original blocks, but reductions to suit the width of our columns.

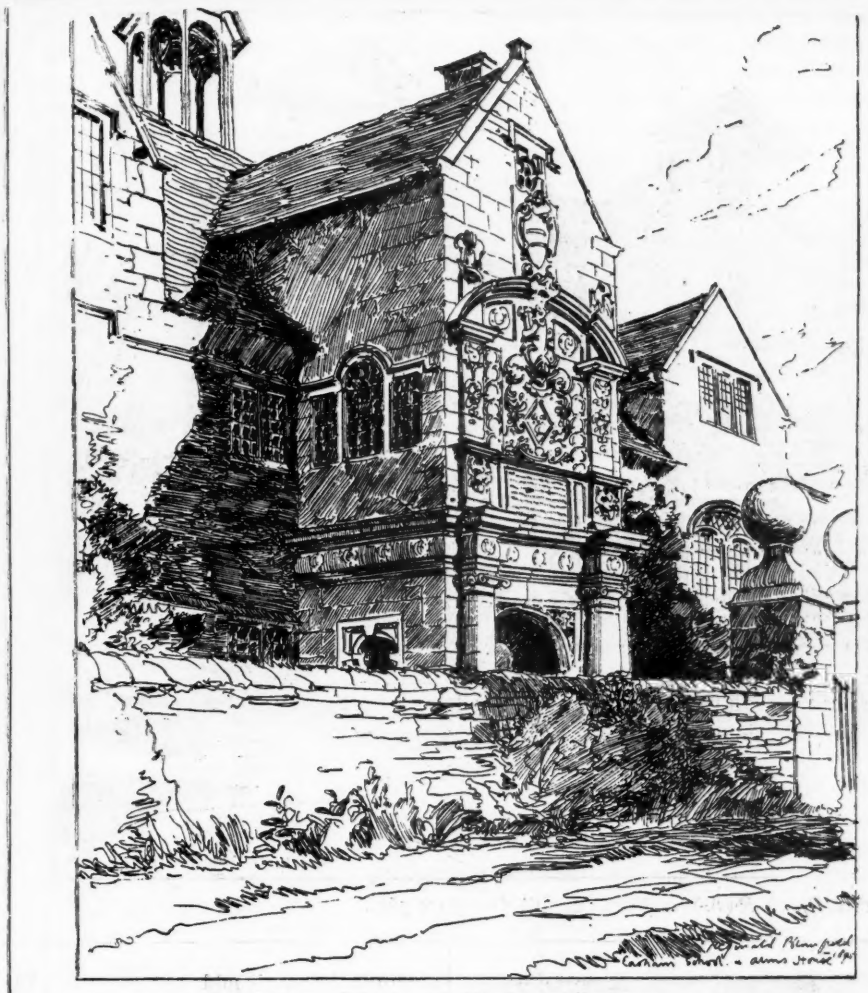


Fig. 2.—School and Almshouse, Corsham.

prise, and may even doubt if the author does not go too far if he means to imply that it is a gain in any sense that architecture should be "dependent on scholarship almost as much as on capacity of design." And we question whether it is quite true, as indicating the future course of Renaissance architecture in this country. In the case of Wren at all events the capacity for design, in the broad sense, was more notable than the scholarship, and the same might be said of Hawksmoor and perhaps of Vanbrugh. So far, however, as architecture was to be dependent on the use and application of antique forms and details, scholarship was no doubt a necessary condition of success; it had been notably lacking in the Renaissance architecture of the previous generations in England, and Inigo Jones laid the foundations for a more sustained and dignified style; but the manner in which it is put in the passage above quoted is liable to be a stumbling-block to the weak The real point in Inigo Jones's reform is better indicated a few pages before, in the remark that he was the first English architect to realise that, if justice was to be done to Italian architecture, "plan and elevation must go together as a harmonious whole," in place of the previous habit of introducing into a building a piece of mere ornament, as in fig. 2, derived from Italian sources, and arbitrarily added as a kind of mark of architectural taste. In this sense Jones did "lift English architecture into a new plane," and no doubt Wren was much indebted to him for showing the way to a homogeneous treatment of Classic design. And yet we can hardly say that it is in that quality that the highest merit of Wren consists; and one may even fancy that if there had been no Inigo Jones, Wren would, with his multifarious invention, have done something even more interesting and picturesque with his numerous churches, on the basis of the old unchartered freedom of design, than on the basis of scholastic design. But he would hardly have achieved St. Paul's; he might have produced a cathedral more picturesque in parts, with more interesting detail, but he would not have realised that dignity which is its salient quality, and which makes us forget the bad detail. So far, Inigo Jones was his architectural master.

It may be true that Inigo Jones, as Mr. Blomfield says, was "the greatest architect that this country has ever produced"; we are inclined to think that potentially he was; but the claim to pre-eminence rests rather on his important influence on English architecture, and the impression which isolated specimens of his work convey, of his knowing exactly how to handle his materials and to do the thing in the best way, than on what he actually accomplished. And after all, had he instead of Wren inherited the *tabula rasa* left by the fire of London, would it have been the better for English architecture? We should have had more of scholastic correctness and more refinement of detail and proportion, but would it not have been Palladianism in a second edition—an Italian yoke on the neck of our own architecture? A certain degree of idolatry has been developed in recent times in regard to Jones's work; there is a glamour about his name, his picturesque and forceful personality, his new learning in art. Is the Banqueting House fragment, after all, so remarkable a piece of work in itself as the followers of the Jones cult would have us take it to be? It is a portion of what would have been a remarkable and a grand architectural scheme if completed, but it was a grandeur to be judged of by the whole rather than by parts; and we cannot see that this would be regarded as so remarkable a fragment but that it is known to be a portion of a great scheme by Inigo Jones. And then there is the question—how far is even this fragment really left as Jones built it?

We have reproduced Mr. Blomfield's sketch of the front of Raynham Park (fig. 3) as an example which he believes to be authentic, of Jones's quieter and less classic manner, and which is a very pleasing instance of the effect of simple symmetrical treatment and good proportion of parts—all except the gables, which strike us as quite unworthy of Jones's reputation for refinement of detail; the scrolls at the side are completely out of scale with the rest of the detail, and the pediments far too obtrusive and *prononcé* in their projection. These details are much more like the kind of work which the author has been attributing to the German workmen than to an architect who was supposed to specially represent Italian culture, and so far as they are concerned, the design is at variance with what the author and other Jonesian critics have invited us to regard as the special quality of Inigo Jones's design. Is it really his, after all?

The work of Jones's pupil Webb, and one or two others of his immediate followers, forms an interim chapter, both in reality and in Mr. Blomfield's scheme, between him and Wren, which we must pass lightly over here; only observing that the gate-pier from Amesbury (fig. 4), ascribed to Webb, and which the author stigmatises as bad in proportion, appears to us a very commendable piece of adaptation of Renaissance detail to a special position. A pier of this kind, which is no very large mass in itself, should have the appearance of weight and massiveness; and if an order was to be used at all in it, the use of it in stunted and massive proportions appears exactly suited to the situation.

The chapter on Wren, which concludes Mr. Blomfield's first volume, is a very thoughtful piece of criticism, and the author puts very well the general truth about Wren's peculiar genius and career, in remarking that he grew to be an architect of first-rate genius by unwearied labour and indomitable effort after a high ideal. This is just the truth. Wren was not by nature a man of specially artistic temperament, but he had the practical root of architectural power in him, in his specially scientific and constructive turn of mind, and the æsthetic side of his intellect was developed by the great and exceptional opportunities he enjoyed, and his anxiety to turn them to the best account. Refinement of taste was not his strong point, a fact sufficiently indicated by his monstrous rejected design for St. Paul's—not that of which the model is now in the Cathedral, but the one, on the same general plan, with the gigantic needle on the top of the cupola, which itself is carried on the main dome. Mr. Blomfield endeavours to suggest that Wren could never have seriously intended this; that it was a design made to catch the vulgar eye with the intention of eluding it afterwards; but this is too far-fetched. It does indeed seem strange that the architect who could afterwards evolve so fine and harmonious a design as the present dome should ever have

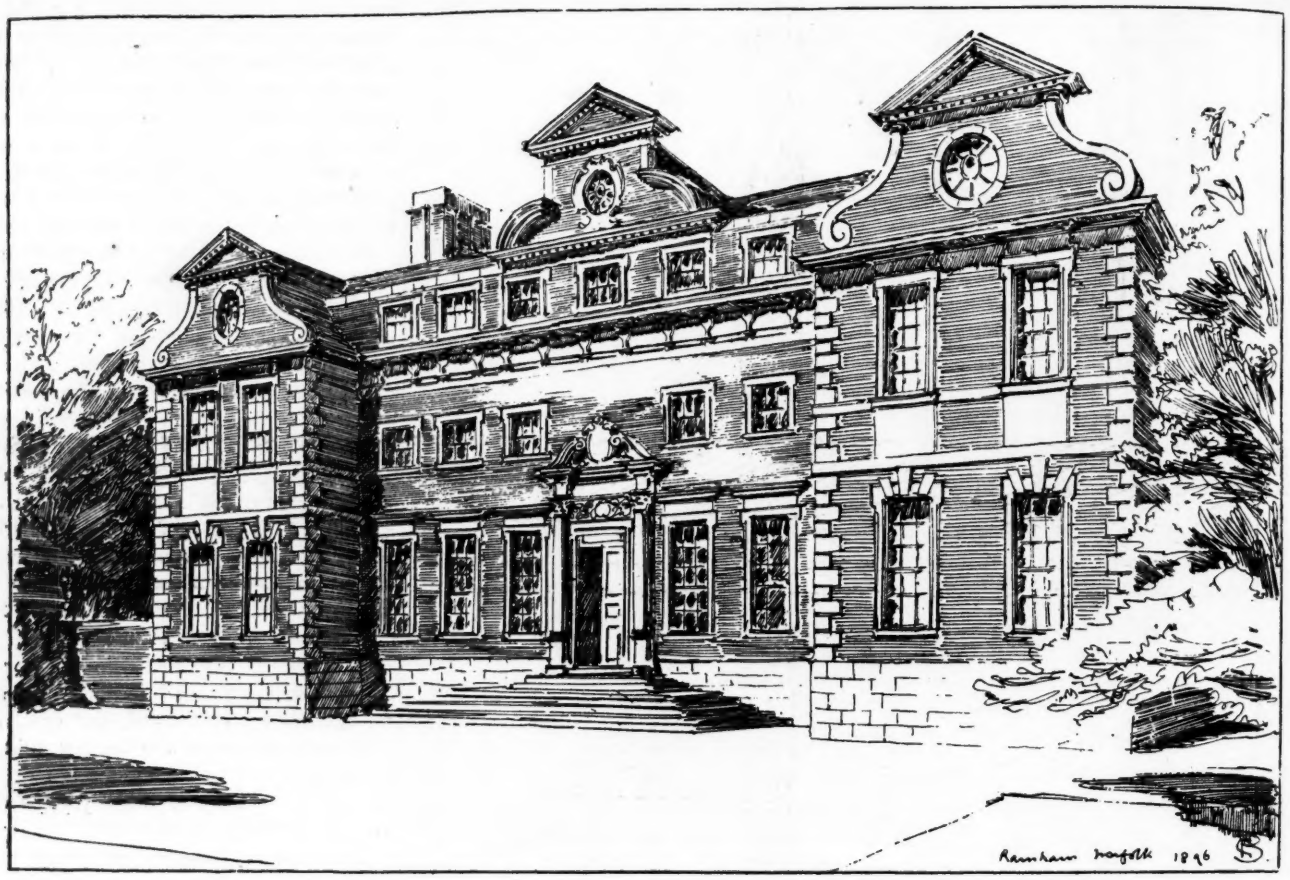


Fig. 3.—Entrance Front, Raynham Park, Norfolk (see page 365).

conceived such a thing as the abandoned design; but it is in keeping with the view already referred to, that Wren achieved architectural design by study and practice rather then by original artistic genius. This is strikingly illustrated again in the intermediate stage of the design shown in the All Souls College elevation, where the dome and western towers are set out nearly in their present mass and proportions, but where the western cupolas are so thin, poor, and rigid in design compared with the beautiful and picturesque design which they present as actually carried out. But even in regard to St. Paul's it is not well to be blindly enthusiastic. The exterior beauty of St. Paul's lies in the central dome and its colonnade, the western cupolas and portico, and the fine manner in which the dome and cupolas compose together. It is no use to deny, to any one who has unbiassed judgment to go upon, that the treatment of the lower portion of the exterior is tame, commonplace, and mechanical; the two nearly equal stages or stories, with their flat pilasters which seem merely *appliqué* features having no necessary connexion with the main mass, form a treatment which shows no sense of proportion, and suggests, to use Mr. Lethaby's phrase, the architecture of "a box of bricks"; and we cannot understand how any one looking at architecture from the point of view of an architect could fail to perceive this. But the fact is that most of the Wren worshippers of the present era are people who have parted with their critical faculty altogether (if they ever had any); they will have it that we must swallow Wren whole, defects and all; and it is a pity that a writer with much more critical insight than most of them possess should not have taken up a sounder position in this respect. It is the dome and the cupolas that really make St. Paul's what it is; and this fact is entirely in keeping with Mr. Blomfield's own estimate of Wren before referred

Fig. 4.—Entrance Pier, Amesbury.

to, and shows how his genius developed as the building went up; it began in a commonplace style, it ended sublimely.

The question of the legitimate employment of the inner and outer dome is more debatable, though Mr. Blomfield does not allow that it is debatable at all; he declares that it is the only way of forming a dome which shall be satisfactory both inside and out. There is something to be said for that, no doubt, in spite of St. Peter's. But the real defect in the case of St. Paul's, which Mr. Blomfield entirely ignores, is the placing above a timber dome a massive lantern of masonry, carried on the concealed cone, but made to appear as if carried by the outer dome which every architect knows could not carry it. The lantern is in fact a piece of masonry construction rising through the timber dome, just as a rock rises above the surface of the sea. That is not a monumental method of architectural design. What Mr. Blomfield means by his curious remark that "various amateur criticisms" have been made on this feature in St. Paul's we do not understand. As a general rule that is exactly the kind of point that amateurs fail to understand; Mr. Blomfield must be aware that strong criticisms have been made upon it by people who are not amateurs; and in failing to recognise the objection to the apparent carrying of a masonry structure by a substructure which could not carry it, he has perhaps for the moment dropped a little too much into the amateur attitude himself.

We shall have more to say on the subject of the later developments of the English Renaissance, more especially in reference to the interesting question, what more can be done with it from the present starting-point.

NOTES.

The Welsh Coal Strike.

FEW labour disputes are more far-reaching in their effects than a coal strike, and although the ordinary householder may not be inconvenienced by the stoppage in Wales, a good many industries outside the Principality are feeling its effects already. Apart from the shipping, which is affected at the outset, there are many users of Welsh steam coal with contracts to run which will be indefinitely suspended, and the same applies to the engineering and other industries largely dependent upon Wales for foundry coke. The conditions under which this struggle has been entered upon, however, render it unlikely that it will be very protracted. The dispute is entirely one of wages, the colliers being too impatient to await the advance which automatically follows improved prices.

Moreover, they are dissatisfied with the existing sliding scale, and their leaders have proved powerless to hold them in while the question was discussed. The prospect of good trade and high prices has induced some proprietors to agree to the terms demanded, but the bulk of them are not prepared to adopt the basis proposed for a settlement.

Mycenæan Tombs at Thebes.

THE number of sites in Greece marked by the discovery of "Mycenæan" antiquities is steadily on the increase. News comes from Athens that excavations, undertaken by the Greek Archæological Society under the direction of the General Ephor Philios at Thebes, have been rewarded by the discovery of important rock tombs of prehistoric date, and corresponding in form and contents with those already known at Mycenæ, Namplia, and Sparta. Three of these tombs are especially noticeable. The first contained a number of *un*burnt bones, the second a trench with two sculls, as well as numerous bones and two gold ornaments of rose shape, four gold tablets and two of Egyptian porcelain, the third contained a golden clasp and a bronze ring. A noticeable point is that the tombs are connected by a trench hewn in the rock, the object of which is at present held to be uncertain. The importance of the discovery of these "Mycenæan" tombs at Thebes is evident—Thebes and Argolis were from early days connected in mythology and legend; the missing archæological link is now supplied.

Open Spaces in Liverpool.

WE regret to find that it is intended to demolish St. George's Church in Liverpool, a creditable specimen of Georgian architecture which stands effectively at the junction of Lord-street and Castle-street, two of the principal streets in the city. Its removal will be a great detriment to the effect of Lord-street, but as its demolition seems now to be decided, perhaps for sufficient reasons of which we are not cognisant, we have only to notice here that the question has arisen as to what shall be done with the site, and an influential deputation waited on the Mayor a few days ago to urge that the site should be retained as an open space. If the church is to go, this is the best thing that could be done, and a *rond-point*, as the French call it, with a fountain or monument in the centre, would be the best mode of substituting something in the way of a central architectural object after the removal of the church. The Mayor promised to present the petition to the Council, and assured the deputation that it would receive all the respect which the importance of the signatories deserved.

The Manchester Sewer Dispute.

THE case between the Manchester Corporation, as plaintiffs, against Messrs. Perkins Graham & Co., the contractors for certain sewers recently carried out in Manchester, which is being heard before Sir Benjamin Baker as arbitrator, appears, as far as the evidence has yet gone, to present one of the most extraordinary and discreditable cases of scamping work that has ever come under our notice; of that there can be no doubt whatever; who are responsible for it is of course a question which is *sub judice*, and on which it would not be right to express any opinion at present, nor has the evidence as yet gone far enough to enable us to form a decided opinion. The admitted fact is that a sewer which by the contract was to be carried out in two rings of brickwork, an inner one of blue bricks and an outer one of red bricks, was found to have been in many parts formed with one ring only, and in other portions the outer ring was laid dry without mortar. The Corporation, on discovering these facts, reconstructed the sewer themselves in the defective portions, and are now claiming to recover the cost of this from the contractors. The point towards which the evidence has been mainly directed so far is, as to whether the contractors were cognisant of and abetted this proceeding, or were only deceived by their employés. When the case is concluded we shall have more to say about it.

Extension of University Teaching.

THE London Society for the Extension of University Teaching will hold their summer meeting at the University of London from May 30 to June 11. All the lectures—excepting those in the educational section, upon child-study and the history of education in London—will have London for their central idea: its geography, literature, history, records, and art. Courses are to be delivered upon "English Architecture, with Special Reference to London Examples;" "The Parthenon Marbles;" and "English Painters in the National Gallery." Mr. Beerbohm Tree will lecture upon "The Ideal Theatre," and Mr. Churton Collins upon "Shakespeare and the London Theatre." Mr. Frederic Harrison is to treat upon "Ideal London," Professor Skeat upon "Chaucer's London," Sir Walter Besant upon "London at the Norman Conquest," and Sir John Evans upon "London Before the Saxons." Sir Frederick Bridge takes for his subject "London Music and Musicians in the Sixteenth, Seventeenth, and Eighteenth Centuries," whilst Professors Ramsay and Silvanus Thompson will severally lecture upon "Great London Chemists and Physicists."

London School of Medicine for Women.

THE new laboratories for anatomy and physical science are nearly completed, Messrs. Holloway Brothers, of Battersea, being the contractors. The block, which stands at the corner of Wakefield-street and Handel-street, Bloomsbury, forms the first portion of the scheme for new buildings to be erected, at an estimated cost of about 20,000*l.*, from Mr. J. M. Brydon's designs. In course of time the present headquarters, at No. 30, Handel-street, together with, as we understand, one or two houses adjacent in Hunter-street, will be removed for the proposed completion of the works. The school was founded in 1874. Three years later the students, who now number 170, were admitted to the wards of the Royal Free Hospital, Gray's Inn-road, and obtained sanction from London University to enter for examination in degrees. The existing school comprises a pleasantly situated house, having a spacious verandah and garden along its east side, in Handel-street; it was originally built, according to a local tradition, by George IV. for Mrs. Fitzherbert. College Hall was established in 1878, in Golden-square, as a residence for women students of this school and University College. The name of Henrietta-street was changed to Handel-street, by the late Metropolitan Board of Works, in November, 1887. The site is on the Foundling Hospital estate.

Overcrowding in Whitechapel.

IN the Annual Report on the sanitary condition of Whitechapel, by the Medical Officer, Mr. Joseph Loane, a strong protest is made against the erection of large barrack-like tenements, where numbers of persons are housed in too close proximity for healthy conditions. The Report says:—

"When there was no available vacant building land in the Whitechapel District, and when almost every house within it was a dwelling-house, the population was less than it is now. At the present time large areas are covered with warehouses, stores, schools, &c., so that the increased population are housed to an enormous extent in huge barrack buildings, which sometimes are constructed so as to allow light and air to permeate the rooms, and sometimes not. The effect of this modern invention is to increase the density of population to a damaging degree. I am aware that some gentlemen (more particularly architects) argue that the movement of air, constantly taking place, naturally provides all the fresh air which is required to prevent anything like injury resulting from aggregating large numbers of people upon a limited space, but I would ask such gentlemen to compare sickness and death rates in two districts occupied by the similar classes of comparable ages. It could be easily proved that where the greatest density was present, there would be found scrofula, consumption, and allied diseases, out of all proportion to the number of cases which would appear in the neighbourhood where the density of population was restrained within reasonable limits. . . . . I have reason, moreover, to believe that the spread of zymotic diseases is aided by the general plan of construction adopted in dwellings of this class. A staircase leading to a corridor which affords access to many rooms more easily facilitates the spread of disease than in the case of tenements which are more separated. It may also be said that as the staircases and passages frequently have to constitute the playground of the children, another factor is imported to account for the spread of disease."

The Coopers' Company's Almshouses.

IT is stated that these quaint old almshouses are about to be demolished for an extension of Free Trade Wharf, and some adjacent premises by the riverside, Shadwell. With their chapel and court-room they form three sides of a quadrangle at the south-end of School House-lane, Broad-street. The charity was originally founded, in the year 1540, by Nicholas Gibson, and Lady Avice his wife, who erected buildings for a free school, and houses for the master and almspeople, to be maintained out of his estates after the death of his widow. By a surrender, dated August 6, 1552, of Alice Knivett (formerly wife of Nicholas Gibson), a large amount of property in Ratcliff, devised to her by her husband's will, was surrendered to the lord of the manor of Stepney, to her own use for life, with remainder to the use of the Coopers' Company for ever upon various trusts. The trusts included the maintenance of the school, and the support and maintenance of fourteen poor persons in the adjoining almshouses. The seven houses were rebuilt by the Company in 1694, and again, after the great fire of July, 1794. In 1611 Tobias Wood, a bencher of Lincoln's Inn, gave 600*l.* to the Company for the maintenance of six poor Coopers near Gibson's almshouses. The Company bought three tenements at Garlickhithe for 326*l.*, and built rooms for Wood's pensioners on the east side of the premises

we describe, where inscriptions record the two benefactions. According to an official return published in 1881, the incomes arising from the Gibson and Wood bequests amounted to 2,093*l.* 12s. 7d. and 293*l.* 3s. 9d. respectively. Provision will be made for giving increased annual pensions to the occupants, who are thus dispossessed of their homes.

Mount Felix, Walton-on-Thames.

THIS riverside property is to be sold, pursuant to an Order of the High Court of Justice. The property embraces fifty acres, and the grounds are beautifully wooded with a variety of trees, including cedar, pine, purple beech, white lime, Turkey oak, hickory, poplar, and elm. The house was built, in the Italian style, after Sir Charles Barry's designs, in 1835-9, for Charles, fifth Earl of Tankerville, and was lately the residence of Sir Edward W. Watkin. The fourth Earl, *obiit* 1822, had bought the property from the representatives of Samuel Dicker, who occupied the former house, and, having obtained an Act in 20 Geo. II., built at his own expense a bridge across the Thames close by his house, employing William Etheridge as architect. The bridge, constructed of wood upon stone piers, was remarkable for the span, 132 ft., and altitude, 26 ft. above flood-water, of its central arch; the two side arches were of 44 ft. span, with an altitude of 18ft. above flood-water. Dicker's nephew, M. D. Sanders, obtained an Act, 20 Geo. III., c. 30, for rebuilding the bridge, which was done by James Payne, architect also of the bridges at Chertsey, Richmond, and Kew. Payne lowered the steep gradient of the middle arch, which he replaced with two, turned the four arches with stone, and carried up the superstructure in brickwork.

Westenhanger Manor House.

WE read that the Folkestone Race-course Club have converted the remains of the old moated manor house for the purposes of their headquarters and club-house. The ancient manor of Le Hangre was formerly divided into two—Westenhanger and Ostenhanger, held respectively by the families of Auberville and Criole; these became united, *temp.* Edward IV., under Sir Edward Poynings of the latter. His descendant, in Henry VIII.'s reign, rebuilt the house at Westenhanger upon a magnificent scale; it had 126 rooms, a chapel vaulted in stone; a hall, 50 ft. by 32 ft., with a music gallery; a gallery 160 ft. long; and an inner court, 130 ft. square. Of the nine towers, alternately square and circular at base, one, on the north side, has been popularly known as "Fair Rosamund's." Hasted (1790) describes the ruins as being "still august and noble," consisting of walls and two towers on the north and east sides; the materials, whereof a large number of worked fragments have been dug up from time to time, are of quarry stone, reputedly from Otterpoole, in Lympne, and, for the sculptured work, of stone from Caen. Sir Edward Poynings, *temp.* Henry VIII., was a K.G., Constable of Dover Castle, and Lord Warden of the Cinque Ports. His son Thomas, advanced Baron Poynings of Ostenhanger, exchanged the property for other lands with Henry VIII. who there made a large park. It subsequently passed to John Dudley, Duke of Northumberland, the Clintons, Sackvilles, Thomas Lord Strangford, *temp.* James I., and the Finch and Champneys families. In 1701 most of the materials of the house were sold for 1,000*l.*, the north-east portion of the fabric being converted into a residence, which in its turn was dismantled; a smaller house was then built out of the ruins. The first house had been erected by Bertram de Criole, styled the "Great Lord of Kent," *temp.* Henry III.

The Baden Water-Cure.

THOSE who know Baden—by Vienna—will find, perhaps not without regret, that in one short year a great change has taken place there. The old castle, with its watch-towers and characteristic subsidiary buildings, has disappeared; and in its place, we are informed on credible authority, "architect, craftsman, and physician have united their best, and by well-considered plans have raised an institution that impresses the beholder with its beauty, and towers proudly above all others of its kind in its adaptation of all the newest discoveries of medicine and all the latest technical and sanitary inventions." It is, in short, a large establishment for the reception of patients taking the water and other cures, and has been erected from the designs of Herr Karl Haybäck, of Vienna. There are seven dwelling-houses, five guest-houses, a wash-house, and a machinery shed among the new buildings; for other purposes some houses in and about the site have been adapted. One of these is for ever sacred, having been for two years the dwelling-place of Beethoven: it is something of a shock to find that this has become an "Inhalatorium"!

Exhibitions in Paris.

THE "Société des Pastellistes Français" has opened its fourteenth exhibition in the Georges Petit Gallery. M. Besnard shows with his usual high qualities in this class of work, in his decorative figures of the Four Seasons, and a fine portrait of a young girl. M. Renée Menard exhibits various pastels also of a decorative character, among which may be specially mentioned the "Tombée de la Nuit"; MM. Guignard, Nozal, and Billotte exhibit landscapes among which are some interesting scenes in the suburbs of Paris; and M. Lhermitte has reproduced, with great vigour and intensity of expression, scenes in rural life. We may notice also "Cruche Cassée" by M. Callot, "Conversation" by M. G. Latouche, the portrait of Mdme. Héglon by Mdme. Madeleine Lemaire, and (though we do not profess to understand their meaning) the symbolic extravaganzas by M. Jean Veber. At the same gallery is to be seen a small collection of the works of M. Tanzo, a young artist of much talent, who has here devoted himself to pictures of the beautiful though rather sombre scenery of the parks of Versailles. Among the best of these are the "Bassin du Grand Trianon," with Mansard's architecture reflected in the calm water, the "Bosquet de l'Arc de Triomphe" and the "Bosquet de la Reine." The exhibition is well worth a visit.

THE SCIENTIFIC RATIONALE OF GLASS PAINTING.—We are obliged to hold over this article, which is advertised, for want of space.

ART UNION OF LONDON.—The Council of the Art Union of London will shortly issue to members of the Society an etching after Mr. Briton Riviere's picture, "In manus tuas, Domine." The picture will be remembered by those who visited last year's exhibition at the Guildhall.

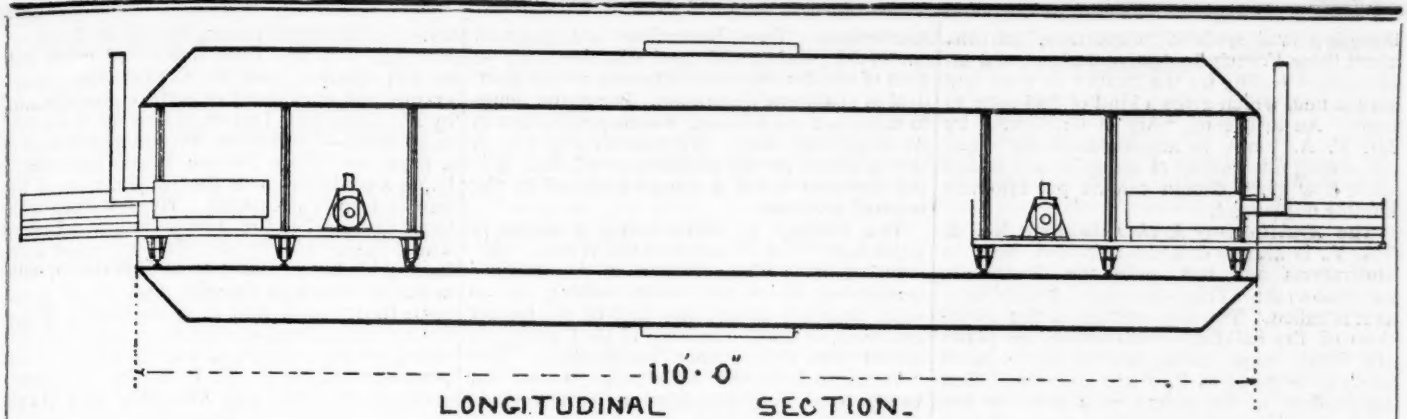
THE DISCOVERY AT THEBES.

AGAIN there is news from Egypt, though not of the earliest times. It seems as if the great kings buried at Thebes are all to be restored to us in the flesh. The find of Deir el Bahri, in 1881, is now almost a household word. There and then the mummies of some fifteen of the kings, and of numerous royalties of hardly lower rank, were found stowed away in a narrow tomb-passage. Apparently they had been secreted, with little regard to their ancient fame, by a new dynasty that had no mind to undertake the endless worry of guarding the royal rock-sepulchres from sacrilegious thieves.

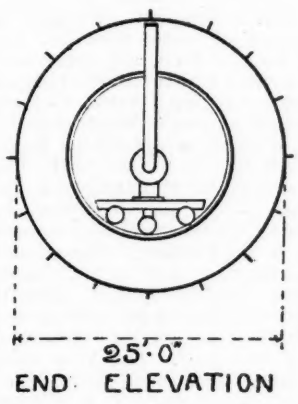
The Theban period begins with the eleventh dynasty (*circa* 3000 B.C.), and ends with the priest-kings of the twenty-first. Of the eleventh dynasty kings we have, indeed, only the coffins; the mummies were probably ill made, and even if some of them may still have been extant at the beginning of the present century, their poor remains were probably scattered by the plunderers seventy years ago. Their sepulchral monuments were small pyramids of brick, which have now entirely disappeared. The twelfth dynasty kings were buried elsewhere. Of the thirteenth dynasty and its immediate successors several kings are known to have been interred at Thebes. The scarab from the breast of one of them is now in the British Museum, but some may still await their awakening to life in death by the spade of the excavator. With the native kings of the seventeenth dynasty, who revolted against and overcame the Hyksos domination, we begin to feel something like personal acquaintance. At Deir el Bahri lay also the mummies of the kings of the eighteenth dynasty down to Thothmes III., in whom its power culminated. There also were the first three kings of the nineteenth dynasty, and Rameses III., chief king of the twentieth. The priestly family of the twenty-first dynasty, to whose pious care we owe the preservation of all the above, were fully represented.

The new find at Thebes, notified in a letter to the *Times* of Wednesday, is of kings of the second rank, not makers of the empire, but rulers who entered into the labours of their predecessors. The heretic kings from the end of the eighteenth dynasty, and the illegitimate rulers from the end of the nineteenth are still missing, but most of the gaps in the first find are filled. To the eighteenth dynasty mummies are now added those of Amenhotep II. and Amenhotep III. The latter king was one of the greatest builders in Egyptian history. His works at Karnak, Luxor, and elsewhere are on a grand scale; the statues of "Memnon" decorated the entrance of his funerary temple, and his vacated tomb is the earliest and one of the finest in the valley of the Tombs of the Kings. Both this king and his grandfather, Amenhotep II., lived in the utmost splendour, but they were not national heroes. So also with Merenptah, who is perhaps intended by the "Sety II." of the Cairo letter to the *Times*. It will be strange if the corpse of the "Pharaoh of the Exodus" is now at length recovered, not from the Red Sea, but from the sands of Thebes. The mummy of Setnekht, founder of the twentieth dynasty, is also found. Though honourably spoken of by his great son, Rameses III., apparently he was not admitted to the first rank, being excluded from the galaxy at Deir el Bahri. The weakling descendants of Rameses III. are of little account.

But in many ways the present discovery of royal dead is far more impressive than that made at Deir el Bahri. The hitherto unopened tomb of Amenhotep II. himself has been entered. A long sloping descent in the rock leads over a pit-trap to a series of chambers. In the first of these is a beautifully-painted boat of wood upon which lies the body of a long-haired man, in perfect preservation, but not mummified. He had been bound to the boat, gagged, and slain by the thrusts of a sword-blade. This can be nothing but a human sacrifice at the tomb, such as we had already dimly apprehended from tomb-paintings of the period. In the next chamber lay the bodies of a man, a woman, and a boy, also in startling preservation but not mummified. In this chamber, as in the others, the floor was covered with wooden statues, vases, and furniture. Any jewellery, such as would attract thieves, had probably been removed in ancient times as a precautionary measure. The third chamber is described as a noble hall, the roof supported by square pillars, and the ceiling decorated with



The Knapp Roller Boat.



yellow stars on a dark blue ground. The walls are covered with paintings in brilliant preservation. At the end is the sandstone (? quartzite) sarcophagus, sunk in the floor and resting upon a block of alabaster, and in it reposes the mummy of King Amenhotep II., with flower garlands still upon neck and legs. In a smaller chamber at the side lie nine royal mummies, two as yet unidentified, though doubtless wrapped in bandages inscribed with their names. The other seven mummies are those of Thothmes IV., the son, and Amenhotep III., the grandson of the king for whom this tomb was excavated ; of Sety II. (? or Merenptah), of Setnekht, of Rameses IV., VI., and VIII. (or, as the latter should be called, Rameses VII.). Rameses V. is known to have been a *persona ingrata* to later kings.

It is the discovery of this great royal tomb, practically intact, and with the strange evidence of human sacrifice still apparent, which makes it almost surpass in interest even the find at Deir el Bahri. The situation of the tomb is not yet reported. Every archæologist will await the arrival of further details with impatience. It is highly satisfactory to learn that Sir W. E. Garstin, who has already deserved well of archæology in the matter of Philae, has arranged for the preservation of the main constituents of this royal interment on the spot, where future visitors to Egypt may inspect it with reverence in the midst of its proper surroundings. Doubtless all necessary precautions will be taken to prevent the decay which too often sets in among relics of mortality shortly after their discovery and exposure—even in the dry air of Upper Egypt.

ANOTHER ROLLER BOAT.

ONLY a few months have passed since it was clearly demonstrated that the Bazin roller boat was a failure, yet this has not deterred other inventors attempting to design a vessel that would roll on the surface of the water instead of ploughing its way through it, and Mr. Knapp, of Canada, has lately constructed a boat which, while differing considerably in detail from that made by M. Bazin, is really similar in principle.

It will be remembered (see the *Builder*, January 30, 1897) that the Bazin boat consisted of a platform supported by six large hollow wheels, the buoyancy of which was sufficient to keep the vessel afloat. Each pair of wheels were caused to rotate by steam power, but the main propelling action was obtained from a screw of the ordinary type. When this vessel made its trial trips it was found that the water adhered considerably to the wheels, and, acting like a brake, prevented a greater speed than some six or seven miles an hour being attained.

As a speed of between thirty and forty miles an hour had been expected by the inventor, this result was naturally very disappointing, and to try and improve matters it was decided to increase the engine power ; but this attempt to improve the speed of the vessel proved unsuccessful, since the weight of the new machinery caused the vessel to sink so deeply into the water that the additional resistance thus incurred wholly absorbed the extra engine power that had been provided.

The Knapp roller boat, the latest experiment, is cylindrical, 110 ft. long and 25 ft. diameter, the ends tapering somewhat suddenly to a diameter of 15 ft. It is made of ⅜-in. boiler plate, and has an inner and outer casing, with a watertight space between them, the ends of the inner casing being open to provide admission to the interior of the vessel.

A description of this curious boat has recently been given in the *Scientific American*, to which we are indebted for the particulars in this article. The deck of the boat, if the name can be applied in this case, is placed inside the vessel and is supported on wheels running on ordinary rails securely attached round the circumference of the inner casing, so that, as the cylinder revolves, the deck remains level. There are actually two of these "decks"—one near each end of the vessel—and on each of them is placed a boiler and a 60-h.p. engine, the funnels from the boilers protruding from the open ends of the cylinder. Now, it will be seen from the above description that if the cylinder were held stationary, the engine platforms would revolve, the engines being geared to the supporting wheels. On the other hand, if the platforms are stationary, then the cylinder will revolve. When the engines are started, the platforms begin to climb the inside of the shell, which being free to revolve, the platforms roll the shell round beneath them. On the outside of the shell are bolted sixteen paddles or floats, 15 ft. long and 8 in. deep ; they are not placed radially to the cylinder, but are slanted so as to hold the water and drive the vessel forward. The boat carries two large tail-boards, or rudders, which are located one on each side, below the platforms.

The trial trip was made some few months ago at Toronto, where the boat had been constructed. When the engines were started, the cylinder made six revolutions a minute, the forward motion being at the rate of six miles per hour.

It will be noticed that this vessel is exposed to the same difficulty as that of M. Bazin's, since the water is liable to cling to the surface of the cylinder and be lifted up, acting as a brake to retard the rotation. This effect will be intensified by the radial floats, which tend to lift a large quantity of water should the boat obtain any speed.

Another troublesome problem to be solved is that of wind resistance. A wind pressure of only 20 lb. per square foot would equal a total pressure against the boat's surface of about 20 tons, so that it is evident that the vessel could never be made to roll except in calm weather, or in the direction of the wind.

This experiment in marine roller locomotion is as novel in its way as was its predecessor, and, as in the case of the French boat, it has been carried out at a very considerable expense; but at present it has given no indication that our existing ideas on ship propulsion are likely to be revolutionised. Experiments of this kind are amusing and interesting, for those who have money to throw away on them, in the calm waters of a harbour or a lake. Any attempt to make a sea voyage in one of these contrivances would probably leave the inventor and his friends as permanent guests of "Davy Jones."

MAGAZINES AND REVIEWS.

IN the *Art Journal* the third article in the series of "Decoration of London Clubs," dealing with the Arts Club, is more to the purpose than its predecessors, as there is something more worth illustrating than in the clubs previously dealt with. The most important article in the number is that by M. Chas. Yriarte, on the Camerino of Isabella d'Este, a model of which has recently been erected in South Kensington Museum. Mr. Fred. Miller gives some account of the "Clergy and Artists' Association," which has been mentioned more than once in our columns, with some illustrations of work done by members of the Society, most of which is certainly very different from what conventionally goes as church decoration. In an article on "Two Theatrical Productions" ("Julius Cæsar" and "Much Ado"), credit enough is not given to the careful study of the Forum scene in "Julius Cæsar," which the writer seems to think over-elaborated, whereas it is a far more scholarly reproduction of what was probably there than we usually see in classical scenes in theatres.

The *Easter Art Annual*, in connection with the *Art Journal*, is occupied by the life and works of Mr. Walter Crane, the biographical sketch being written by the artist himself. The principal illustration is a reproduction of his pathetic composition "The Bridge of Life"; the remainder are reproductions of various book illustrations. The article is divided into headings dealing with different classes of artistic work, and some account by Mr. Crane of his method of treating each, which is naturally of considerable interest. Mr. Crane's book illustrations have had a very large influence on the illustrative art of his day—he is almost a school in himself, with many imitators. The whole of the illustrations to children's books are delightful. It is rather a question whether the more serious illustrations, of a quasi-decorative kind, to great poems such as the "Faërie Queene," will be accepted by a future generation as satisfactory. They appear to us to be too much pervaded by an archaism which, though perhaps not consciously affected, represents a fancy of the present time rather than an appeal to broader and more permanent artistic perceptions.

In the *Magazine of Art* an article on Chéret, the French artist, best known in this country as a designer of posters, is illustrated by some reproductions of red-chalk studies of figures, which show that his field is rather wider than is generally supposed. Mr. Starkie Gardner draws attention to some of the iron-work at Hampton Court—stair-railings, &c.—which has rather been overlooked beside the more permanent claims of Tijou's garden screen ; and Mr. Aymer Vallance contributes an article on the development of wall-paper designs and manufacture.

The *Studio* (March 15) publishes an illustrated article on "Decorative Art in Paris," a very interesting subject, as there is a kind of revival or new movement going on in Paris at present in decorative art ; but we must confess that the designs illustrated give us the same feeling that we derived from the furniture and other such work at the New Salon last year, viz. : that

there is a fatal spirit of "cleverness," of *chic*, about these French decorative designs, and an absence of feeling for the beauty of pure and simple line, which gives a kind of bad taste to them. An article on "Art in Gridirons," by Mr. F. A. Jones, is accompanied by some interesting illustrations of old gridirons, which show how much design can be put into this humble implement.

The *Architectural Review* (Boston) No. 2, Vol. V., is almost entirely occupied, both in illustrations and text, with the Tennessee exhibition; the "Trans-Mississippi Exhibition," as it is called. The large details of the elevations of the buildings, with which the plates are filled, seem hardly worthy of so much illustrative space, as they are little more than applications of the orders, in a more or less academical manner, to buildings executed in a cheap imitation of stone in a perishable material. This is the very last kind of thing that a temporary exhibition building ought to be. In designing buildings for a temporary exhibition there is a great deal of scope for originality and character in design, as some of the French architects showed us admirably in structures for the 1889 exhibition; but the problem is to combine an obviously temporary character with some architectural interest, not to make perishable imitations of monumental architecture.

Among the subjects specially illustrated in the *Artist*, which has a number with a great variety of interest, are the "The Impressionists of the Luxembourg Museum," "The Evolution of the Poster," the works of Mr. Jacomb Hood and of Mr. Adrian Jones, and the work of Antonin Daum, a French glass-worker of the present day. All these subjects are largely illustrated, but we object to the practice, which seems peculiar to the most modern journals dealing with art, of distributing illustrations broadcast over the pages, without any consideration of proximity to the articles referring to them; a method which seems to mix up everything in a manner rather irritating to the reader.

The illustrations of recent Dutch decorative design under the heading "Das Neue Ornament" in *Decorative Kunst*, though differing in manner from the Paris work referred to in a preceding paragraph, produce a similar impression of the prevalence of eccentricity over considerations of beauty and purity of line. There seems to be a striving after originality at all costs. The conclusion one comes to in looking at some of these new developments in decorative design is that, although in painting and sculpture, and in some respects in architecture, the French are our betters, in decorative design there is no work done anywhere at present which is equal to the best English decorative art of the day.

In the *Antiquary*, Mr. Lewis André writes an article on "Old Sussex Farmhouses and their Furniture," with some sketches, including some interesting forms of fire-irons and other implements. The recommendations made in Mr. G. Payne's article on "The Preservation of Antiquities," especially in regard to the means to be taken to secure the preservation of objects found by labourers in the course of excavation for buildings or other purposes, should have attention.

The *Engineering Magazine* includes two articles of special interest to English readers; that on "British locomotives," and that on "Heating Buildings by Steam," in which we presume we get the results of the latest American methods.

The *Fortnightly* contains an article by Mr. H. M. Paull on "The National Gallery and Common Sense." The common sense which the author wishes to see applied in the National Gallery consists in part in the grouping of the pictures according to authorship, and not according to considerations of symmetry and size. He gives some instances of the manner in which painters and schools are disjoined. We agree with the criticism entirely, and also with the comments on the absurd and incomprehensible neglect of the French school of painting in our national collection.

In the *Revue Générale* the illustrated art article which has now become a feature of this publication is occupied this month with various examples of German architecture, including among the illustrations a rather effective view of Spires Cathedral as seen rising above a mass of trees which conceal the lower portion of the building.

In *Scribner* the "Field of Art" article describes the new porches of Trinity Church, Boston, left in an unfinished condition by Richardson. Two illustrations are given of one of the porches, rich and effective work—a kind of neo-Byzantine architecture with a great deal of sculptural decoration. The writer seems to think that the building was more effective in its unfinished state. We are not told who is the architect for the addition, or whether it is the carrying out of a design sketched by the original architect.

The *Century* is commencing a series of articles on "The Wonders of the World," commencing with "The Pharos of Alexandria," concerning which we know nothing at all with certainty except the fact of its former existence, so that the article and Mr. Castaigne's sketch are alike rather imaginative. The "American Artists Series" devotes a very few words to C. F. Ulrich, born at New York in 1858, with an engraving of his very pretty picture "The Wood Engraver," a woman seated at her work before the light of a window through which a brick wall is seen. Ulrich, it appears, received the completion of his artistic education at the Munich Academy, so that he cannot quite be reckoned an American artist by training.

Harper includes an article by Mr. Worthington C. Ford on the now somewhat belated subject of "The Commercial Aspects of the Panama Canal."

The *English Illustrated* contains a popular but rather amusing article on "Flying Machine," treated not scientifically but historically; the interest lying in the reproductions of old engravings of various devices for flying. The number also includes a sketch of the life and works of Angelica Kaufmann (so spelt: should it not be "Kauffmann"?)

The *Gentleman's Magazine* includes some information on the works of Lorenzo Lotto and Dosso Dossi, under the title "Two Painters of the Sixteenth Century."

We have received the *Genealogical Magazine*, *Knowledge*, and *The Quarry* for the current month.

ARCHÆOLOGICAL SOCIETIES.

ROYAL ARCHÆOLOGICAL INSTITUTE.—At the general meeting on the 6th inst., Mr. Emanuel Green, hon. director, in the chair, Mr. Mill Stephenson exhibited rubbings of incised slabs from the churches of Madron, Ludgvan, and St. Buryan, Cornwall. These slabs of black slate are peculiar to the country and are of local manufacture. The figures are in slight relief, but the inscriptions are incised.—Mr. Talfourd Ely then read a paper on the antiquities of Hayling Island. In the year 1045 the Manor of Hayling was granted to the church and monks of Winchester; but William the Conqueror gave the greater part of the island to the Abbey of Jumièges. In the reign of Henry III., a priory was built in Hayling, which, on the suppression of alien priories by Henry V., was bestowed on his new foundation of Carthusians at Shene. Henry VIII. granted the priory of Hayling to the College of Arundel. Before the building of the priory there was a church in Hayling; but it was swallowed up by the sea in the times of the Edwards. The older font in South Hayling Church may have belonged to this earlier edifice. The later church dates from the thirteenth century, and contains many curious features. North Hayling Church is perhaps more ancient. Near it is the oldest house in the island. The Manor House dates only from 1777, but stands on the site of an older building, to which belonged the moat, the square well, and the manorial dovecote. Close by is the old Tithe Barn, 140 ft. long by 40 ft. broad, said to be "capable of holding upwards of 150 loads of sheaf wheat." Its stone basement is said to date from the fourteenth century. In 1293 we hear of the prior holding a "water-mill worth by the year sixty shillings." This was, no doubt, represented by the tidal mill, some of the charred timbers of which are still standing. Tourner Bury is an almost circular space surrounded by an earthen rampart and fosse, and is of British origin. In the Towncil Field, not far from North Hayling Church, are the foundations of a large building, near which much pottery has been found, and also coins ranging from a middle brass of Augustus to a British imitation of a coin of Postumus. During an experimental excavation of this site Mr. Ely has discovered, in a trench 21 ft. long, over fifty tesseræ, which had obviously formed part of a mosaic pavement. This established the Roman origin of the remains. For the illustration of Mr. Ely's paper, Mr. H. R. Trigg, of Hayling, lent the above-mentioned coins and several sketches; and Mr. Ely exhibited photographs and specimens of pottery given to him by Mr. Carpenter Turner, the owner of the site in question.—Chancellor Ferguson contributed a paper on "More Picture Board Dummies," being a continuation of the subject treated by him on former occasions. He first dealt with those that exist in the Town Hall, Dorchester. These figures are life size, clad in armour, each having his hand resting on a large shield, with armorial bearings thereon, and were made some thirty years ago as a decoration of the town on the occasion of a local festival. He also gave descriptions of two dummies in the possession of Sir E. R. P. Edgcombe, representing a boy and girl, also of a little Dutch girl, the property of Major Brown, of Callaly Castle, Northumberland. Perhaps the most interesting of the series were four from Raby Castle. Two of these are grenadiers, one a peasant woman with a basket of eggs, and the other a man carrying a goose. Of the first two, Chancellor Ferguson brought detailed evidence to show that they represented Royal Welsh Fusiliers of the time of George II. Chancellor Ferguson exhibited photographs and drawings of the various dummies described.—Lancaster has been selected as the place of the next annual meeting of the Institute. The excursions will last from Tuesday, July 19, to 26 inclusive.

BRITISH ARCHÆOLOGICAL ASSOCIATION.—The ninth meeting of the session was held at 32, Sackville-street, on the 6th inst., Dr. Winstone in the chair. Mr. Way exhibited an interesting collection of antiquities recently discovered, consisting of a Romano-British vase, quite perfect and in fine condition, a food vessel, an urn, several small glass bottles, and the bones of the forearm of a young female, together with a finger ring and several bronze armlets, which still encircled the bones at the time of discovery. These were all found in Southwark, as were also the following articles, viz., an iron seal of the thirteenth century made for some private owner for sealing the conveyance of his land, and two curious examples of the toys made in the shape of a cock, which superseded the inhuman use of the living bird in the Shrove-tide sports of cock throwing. Mr. Way also exhibited a British bead, and a bone spear head found in Thames-street. A paper by Miss Russell upon "The characters of Wolsey's inscription now at Oxford compared with older ones in Scotland," was read by Dr. Birch.

COMPETITIONS.

ASYLUM, BIRMINGHAM.—The competitive designs for the new lunatic asylum were opened on the 5th inst. to the inspection of members of the Birmingham City Council. Six local firms of architects were instructed to prepare designs, a sum of 100*l.* being paid in each case. The selection of the committee, under the advice of their assessor, Mr. G. Hine, of London, are the plans of Messrs. Martin & Chamberlain. The other five competitors were: Messrs. Cossins & Peacock, Messrs. Mansell, Mr. F. B. Osborn, Messrs. Ingall, and Messrs. Cross & Nichols.

BOARD SCHOOL, BLACKBURN.—Messrs. Cheers & Smith were the successful architects in the local competition for a new Board School to be erected in Accrington-road, Blackburn, and they have received instructions to proceed with the work at once. Thirteen sets of designs were sent in, and they were adjudicated upon by Mr. A. Royle, F.R.I.B.A., of Manchester. The estimated cost of the school is 6,960*l.*

CLOCK TOWER, LEWISHAM.—Upwards of sixty designs have been received in the competition for the erection of the clock tower at the junction of the High-street, Lewisham, and the High-road, Lee, in local commemoration of her Majesty's Record Reign. It was stipulated that the cost should not exceed 700*l.*

TOWN HALL FOR DUKINFIELD.—The Dukinfield District Council, having decided to erect a Town Hall at a cost of 10,000*l.*, advertised for plans. In response twenty-two sets of plans were received. The premiums have now been awarded as follows: first (40*l.*), Messrs. John Eaton, Sons, & Cantrell, Ashton-under-Lyne; second (20*l.*), Messrs. Hindley & Marshall, Monton, Eccles.

APPOINTMENT.—Mr. Alfred Young Nutt, Surveyor to the Dean and Chapter of St. George's Chapel, has been appointed Clerk of Works at Windsor Castle, in succession to the late Mr. T. Howe.

ARCHITECTURAL SOCIETIES.

EDINBURGH ARCHITECTURAL SOCIETY.—The members of this Society met on Wednesday, the 6th inst.—Mr. W. N. Cumming in the chair—when a lecture was given by Mr. John Kennedy on "Building Stones: their Preparations and Use." The lecturer insisted on the necessity of architects knowing more about the stones they employed, and described and classified building stones, their various dressings, and their special purposes.

ENGINEERING SOCIETIES.

INSTITUTION OF CIVIL ENGINEERS.—At an ordinary meeting of this Institution on the 5th inst., Mr. W. H. Preece, C.B., F.R.S., Vice-President, in the chair, the paper read was on "The Electricity Supply of London," by Mr. Arthur H. Preece. The supply of electricity on a commercial scale had, said the author, been started in London after the passing of the Act of Parliament in 1888, which amended the Act of 1882, principally by extending the date for compulsory sale to the Local Authority from twenty-one years to forty-two years. In 1888 many companies applied for Provisional Orders, and, in determining which were to be granted powers, and the districts over which the powers were to extend, the Board of Trade decided that competition would be advantageous to the public, and that it was advisable to allow one direct-current system to compete with one alternating-current system. There were now in London eleven important companies and five Vestries supplying electricity, and three other companies and three Vestries were taking steps to start works. The capital invested in the industry amounted to 6,000,000*l.*, and plant was installed to the extent of 80,000 h.p., the equivalent of 2,000,000 eight c.p. lamps being connected to the mains. The total annual revenue was 800,000*l.*, and the total annual expenditure 450,000*l.* Of the systems for supplying electricity in London, the alternating current was applicable to large areas where consumers were scattered, and it enabled the generating works to be established by the riverside, or where land was cheap and coal was easily unloaded. The undertakings using this system were the City of London Company, the Metropolitan Company, the London Electric Corporation, the County of London Company, the House to House Company, the Hampstead Vestry, the Islington Vestry and the Hammersmith Vestry. The direct-current systems were divisible into two classes, the high-pressure and the low-pressure. In the former rotary transformers were used to reduce the high pressure to a low pressure, while the latter produced and distributed electricity at the same pressure at which it was supplied to consumers. The direct-current systems were applicable to compact areas, and, with the use of high pressure, to scattered or isolated compact areas. The chief advantages of the direct-current system were the possibility of using storage batteries, which could not be employed with the alternating-current systems, greater efficiency in distribution, and greater adaptability to motive power. The undertakings using the system were the Chelsea Company (high pressure), Charing Cross and Strand Corporation (high pressure), the Westminster Corporation, the St. James's and Pall Mall Company, the Kensington and Knightsbridge Company, the Notting Hill Company, the St. Pancras Vestry, and the Metropolitan Company (at one works). The generating works of the several undertakings in London contained many interesting features. No less than twenty different works had been erected. The boilers used comprised the water-tube, marine, Lancashire, and miscellaneous types; but the preference for the water-tube boiler was very marked. The works were liable to sudden demands through fogs, and the quick-steaming properties of this type of boiler were of great advantage. The boilers were fired chiefly by hand with Welsh coal, but in the works of the City of London Company and the County of London Company mechanical stokers and cheaper coal were used. The use of extensive systems of steam-pipes was now being dispensed with. The multiplicity of valves was unnecessary, and the number of valves was being reduced, and arrangements were made as simple and with as few joints as possible. The present tendency was towards engines of the marine type for large outputs. The high-speed engine was not used for larger powers than 750 h.p. Some engineers, however, found engines of 350 h.p. sufficiently large and the most convenient unit to adopt. The dynamos were similar in most works, and were always connected direct to the engines. Storage by secondary batteries was not extensively employed in London, as their maintenance had hitherto proved expensive. But a few works used them entirely for maintaining the supply after midnight, and in the daytime in summer. The author gave the results of a test of a small marine engine and alternator, showing the combined efficiency to be 85·5 per cent. The question of vibration had been of great importance in many works; no cure had been found effective when once vibrations were set up. High-speed engines must have three cranks to be free from appreciable vibration. The favourite methods of distributing electricity were to transmit current at a high pressure in heavily-insulated cables in iron pipes, and current at a low pressure in insulated cables in stoneware conduits or in cables heavily armoured and laid direct in the ground. Rubber was now little used, paper and jute, impregnated with insulating compounds, having been extensively adopted. The usual system of measurement of the electricity supplied was by meter, and the average charge was 5½d. per unit. The average charge in 1890 was 7½d., so that the price of electricity had been reduced in eight years no less than 25 per cent., equivalent to a reduction in the price of gas from 4s. to 3s. A curve was given to show the variations in the price of gas since 1870. The average price had varied between 4s. and 2s.; it was now 2s. 7d. The cost of generating and distributing electricity had been greatly reduced in the last few years. In 1892 it was seldom supplied for less than 4½d. per unit. The usual cost was now 2½d. to 3d. The actual cost of generating was about 1½d. per unit, and the cost of management, &c., about 1d. The direct current was everywhere produced at a cheaper rate than the alternating current. The difference was between ½d. and 1d. per unit, or 20 per cent. cheaper. Since 1888 an important inquiry had been held by the Board of Trade regarding the maximum pressure permissible in consumers' premises. The result of this inquiry, in 1896, was to increase the pressure from 150 volts to 250 volts. A comparison was made between the two largest companies in London, namely, the City of London Company, which supplied alternating current, and the Westminster Corporation, which supplied direct current. Both companies had nearly the same number of lamps connected to their systems, the number of 8 c.p. lamps connected being 270,898 and 269,939 respectively. The capital expended was respectively 945,829*l.* and 546,434*l.*; the annual incomes per 8 c.p. lamp, 11s. 9d. and 7s. 9d.; the annual expenditures per 8 c.p. lamp, 4s. and 3s.; and the costs per unit, 7·6d. and 5·8d. The industry was growing so rapidly that most undertakings had to seek new sites for generating works, and the tendency was to erect large works on the outskirts of London, where coal could be conveniently brought to the site, and where water could be obtained for condensing. The powers granted under Provisional Orders were limited as regards the compulsory purchase of land, and further powers were being sought by some companies from Parliament, so that they might be placed on the same footing as railway companies. No less than 40,000 h.p. was now being installed in London in order to meet the demand for electricity in the immediate future.—It was announced at the same meeting that eight Associate Members had been transferred to the class of Members. It was also reported that forty-seven candidates had been admitted as Students. The last ballot of the Session 1897-98 resulted in the election of Lord Lister, D.C.L. (President of the Royal Society), as an Honorary Member; of three Members, of thirty-seven Associate Members, and of three Associates.

ORGAN, ST. JOHN'S CHURCH, KNOTTY ASH.—An organ and screen were dedicated at this church on the 31st ult. The work has been carried out from the designs of Mr. Charles E. Deacon, architect, of Liverpool. The organ is enclosed in a carved oaken case, designed in harmony with its surroundings. The organ has been made by Messrs. Conacher & Co., of Huddersfield, whilst all the oak work is from the studios of Messrs. Harry Hems & Sons, of Exeter.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A SPECIAL General Meeting (Business) of this Institute will be held on Monday, to confirm the resolution passed at the Special General Meeting held on April 4 suspending By-law 26.

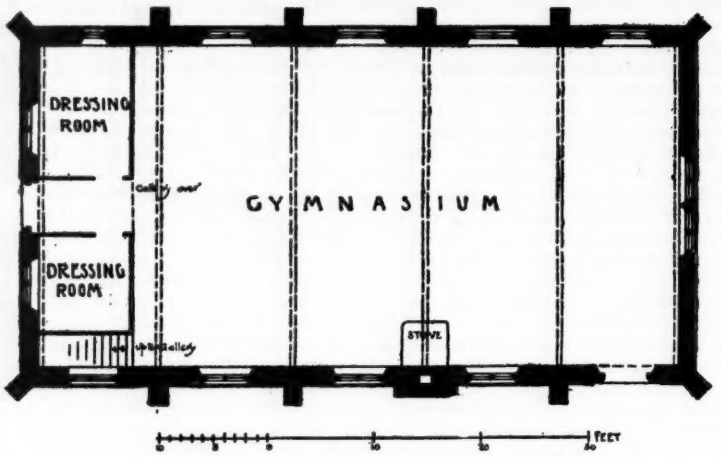
The Lords of the Privy Council having raised certain objections to ambiguities of wording in the additions and amendments to By-laws 30 and 9 as resolved upon at the Special General Meetings respectively held on June 14 and November 13, 1897, it is proposed to alter such additions and amendments as follows:—(*a*) By-law 30: Provided always that when the Council of the Institute receive a unanimous recommendation formally submitted by the council of any allied society that a practising member of the profession is eligible and worthy of being elected as a Fellow, the Council shall, *during the five years from the date of approval of this provision by the Privy Council*, have power to elect him, his work being of sufficient merit. The Council may also elect annually to the Fellowship without ballot the President or President-elect of any or all of the allied societies who may be eligible and apply for admission. (*b*) By-law 9: To alter the words in the antepenultimate sentence "the said meeting" to "the close of the last General Meeting in June."

At the same meeting the word "first" in the last sentence of By-law 31 will be altered to "last."

The twelfth General Meeting (ordinary) of the Session will then be held when Mr. A. N. Paterson will read a paper entitled, "A Study of Domestic Architecture in the Eastern States of America in the year 1896: with Special Reference to Questions of Plan, Construction, Heating, Drainage, &c."

THE ARCHITECTURAL ASSOCIATION DISCUSSION SECTION.

THE eleventh meeting of the present session of the Discussion Section of the Architectural Association was held at 56, Great Marlborough-street, on the 6th inst., Mr. Matt. Garbutt, Chairman of the Section, occupying the chair. Mr. A. H. Ryan-Tenison introduced the subject of "Beautifying Church Interiors" in a lengthy paper dealing with the interior decoration of churches from both theoretical and practical standpoints. He commented on the growing desire on the part of the public for coloured decoration and a keener enthusiasm for it amongst architectural students. The decoration of St. Paul's Cathedral, St. Augustine's, Kilburn, the Mortuary Chapel of St. Alban's, Holborn, and the new Roman Catholic Church near Battersea-square, were but instances near to hand of this taste, which was showing itself all over the country. After describing modern theories of colour and expressing the belief that all the theoretical works extant would not make a colourist of one who had not the sense of colour inborn in him, and that true inspiration could only be gained from a study of nature, he concluded this part of his paper by emphasising the following points: "Light" and "colour" were undoubtedly required in this country; in general effect the decoration should be quiet and subdued, simple in treatment, and with one tone of colouring; more powerful in the lower parts, lighter in the upper parts, and the detail more pronounced in the sanctuary. If mosaic were employed, it must be not less than 12 to 14 ft. above the floor; and in all things the decoration must wait on the architecture. Mr. Tenison then went on to describe the various materials and methods used in church decoration—constructional decoration, where the ornament and colour were obtained from the materials of the fabric itself; carving and sculpture; marble, stone, and tile flooring; wall decoration in mosaic, fresco, marble veneers, paint, distemper, stencilling, stamped plaster decoration, &c. He brought his paper to a close with some remarks on the relations between architect and artist, holding that they should work hand-in-hand together, the architect's work not ending with the design of wall and roof, but extending to the furnishing and decoration of the entire structure.—Mr. H. V. Crawfurth Smith, in opening the discussion, said he thought, after what they had heard of the difficulties connected with producing successful frescoes, they would be afraid to tackle them at all. He hoped the meeting would initiate a crusade against the use of highly-polished



Gymnasium, St. Peter's School, York. Plan.

brass work in churches. He was glad to see a lectern of copper in St. Saviour's Church. Mr. E. Swinfen Harris spoke of the value of stencilling as a form of decoration when artistically treated, the ties always being part of the design. In one church he had decorated he had made over 200 drawings for stencils alone. If he had been successful, it was from two causes—that of studying every pattern most carefully, and never being satisfied with it till it had been offered up in its place. He agreed as to the hateful character of lacquered brass in churches, and referred to the case of St. Hilda's, Leeds, where all the vessels were of earthenware. The discussion was continued by Messrs. Hopkins, Strange, and J. H. Jones. The Chairman deprecated the abuse of any particular metal. Brass was as capable of artistic treatment as any other metal, and even cast iron could be made very beautiful. Mr. F. R. Farrow attended the meeting as Special Visitor, and summed up the discussion with some remarks on the general principles which should guide one in designing the decoration of a church. The next meeting will be held on the 27th inst., when Mr. J. Humphrey Jones, B.A., will read a paper on "Hospitals: principally those for Isolation Purposes."

Illustrations.

THE NEW BATHS, HARROGATE.

WE gave illustrations, in the *Builder* of August 2, 1890, of the accepted competition design for this building, by Messrs. Baggallay and Bristowe; we now give some illustrations of the finished building, showing the exterior, the interior of the central hall and pump-room, and the cooling-room of the Turkish bath.

The exterior had to be designed for execution in the local "wall stones" as far as possible. These wall stones are got in thin beds of from 3 in. to 6 in., mostly about 3 in. or 4 in., and the face is merely "knapped"; they produce an effective wall surface.

The end pavilions were originally intended to have—and perhaps may some day have—similar parapets and pinnacles to those on the middle block.

The central hall is used as the pump-room, and the palms behind the counter are now replaced by a fountain. The door seen at the furthest end is the main entrance; the view is taken from the one leading into the winter garden and promenade.

The view in the Turkish bath is looking from the entrance of the dressing-room through the cooling-room to the cold plunge, beyond the screen on which the clock stands. The architecture and decoration follow Cairene models.

The plans of the building were given in the illustrations of the competition design, already mentioned.

GYMNASIUM, ST. PETER'S SCHOOL, YORK.

THIS building, erected in 1895, was the gift of an old schoolboy. It was made Gothic in style to harmonise with the existing buildings, which are of the florid Gothic of 1830. The walls are built of Pateley Bridge stone, and the dressings are from the Bolton Wood quarries, near Pickering. The roof is covered with red pantiles. The sun-dial to the south door has the arms of the Dean of York and the Headmaster, Mr. H. T. Handford, below it; while the west door has the arms of the Dean and Chapter of York, surrounded by the York rose. The contractor was Mr. T. P. Barry, and the carving was executed by Mr. Milburn, both of York. Mr. Francis W. Bedford, of Leeds, was the architect.

PROPOSED SCREEN AND DECORATION FOR ALL SAINTS', CAMBRIDGE CIRCUS.

THE screen and decoration proposed for this church are intended to form, together, one conception of what is sacred and fit for the inspiration of those who worship there. The walls of the chancel are set apart for the painting of three subjects, "The Nativity" (on the left, "The Crucifixion" (in the centre), and "The Resurrection" (on the right); below these pictures the panels will have masses of plain colour. The screen will be decorated with scrolls and texts, and in the lower panels angels in adoration will be painted.

G. J. J. LACY.

COMPETITIVE DESIGN FOR CHURCH AT EXETER.

THIS is one of the designs made for a rather too famous church competition at Exeter. The design was prepared in accordance with the instructions to architects, providing accommodation for 600, and capable of being built in sections and with provision for future extension. The limit of cost is 6,000*l.* exclusive of fittings, heating, and tower.

The nave and chancel are arranged under one continuous roof and are 22 ft. wide. The aisles are carried through behind the choir and are each 13 ft. 6 in. wide. Oak screens were intended across the full width of the church at the entrance to the choir, and also on each side of the choir.

The tower was placed opposite the end of Clarence-street, which is a main road with public gardens at the end of it. It was also arranged so that it could be added at any future time. A heavy tower did not seem advisable owing to the nature of the foundation, hence the motive of the light upper portion which is intended to be of wood covered with copper. The organ was to be placed in the tower and played from a console adjoining the choir.

Special attention had to be given to the liability of the site to floods, hence the building was raised above the road, and the heating chamber was planned under the sanctuary with its floor 6 in. above flood level.

The materials proposed were hammer-dressed broken-coursed red Parkscombe limestone for the general walling with box-ground or Doulting stone dressings; 7 lbs. lead for covering the aisle roof, and grey stone slates for the nave and chancel.

Inside, the walls were shown panelled 6 ft. high with wood, and plastered above with stone dressings and quoins.

The author of the design is Mr. W. H. Brierley, of York.

The drawing was exhibited in last year's Royal Academy.

CHURCH OF ST. SAVIOUR, ST. LEONARDS-ON-SEA.

THIS church, which we illustrate by the reproduction of a sketch exhibited in last year's Royal Academy, is to be erected in a growing district to the extreme west of St. Leonards, and is to take the place of an iron structure now existing. It will be built of brick and stone, the roofs being covered with copper. Owing to the great fall in the ground, the space below the church will be utilised as a church room and for other parochial purposes.

Messrs. W. H. & J. D. Murray are the architects.

THE SURVEYORS' INSTITUTION.

A TWO-DAY meeting of this Institution will be held next week at Manchester. The members will assemble on Wednesday at 10.45 a.m. in the Mayor's parlour at the Town Hall, where they will be welcomed by the Reception Committee, headed by Mr. John Holden, the Provincial Chairman of the District. After the reception by the Local Committee, the proceedings will be opened with a brief address by Mr. Christopher Oakley, the President of the Institution. The following papers will then be read and discussed: (1) "Manchester from 1847 to 1897," by Mr. John Holden; (2) "Lessons from Fire and Panic," by Mr. T. Blashill; (3) "A Consideration of some of the Present-day Difficulties met with in a Land Agent's Practice," by Mr. C. P. Hall; (4) "Notes on the Construction of Town Buildings," by Mr. Howard Chatfeild Clarke. A dinner will be held at the Grand Hotel in the evening at 6.30. On Thursday visits will be made to various places of interest.

THE ARCHITECTURAL ASSOCIATION SPRING VISITS:

PUBLIC LIBRARY, ETC., SHOREDITCH.

THE fifth visit of the season, which took place on Saturday, April 2, was to Shoreditch Public Library, and Baths and Washhouses adjoining.

The library, which has been carried out from the designs of Mr. H. T. Hare, occupies a corner site, light being obtained from three sides. A short flight of steps from the public entrance in Pitfield-street leads to the vestibule, the chief feature of which is a modelled plaster frieze by Messrs. Jenkins, coloured by Mr. Gerald Moira, the subjects being taken from Shakespeare's plays. Leading from the vestibule are the news and boys' rooms and the loan department. The news-room, which provides ample accommodation, contains fourteen oak stands to hold four papers, two on each side. The stands, which are of pleasing detail, are fumigated and dull polished.

In the loan department provision is made for 20,000 volumes. A lift for books is arranged from the book store room in the basement up to the gallery over the reference library on the first floor. By an ingenious arrangement the boys' room generally is well supervised from the porter's box on the stairs. The walls and balustrade, &c., of the hall and staircase are of Hopton Wood stone treated with very charming effect.

The first floor comprises magazine, committee, and librarian's rooms, and a reference library with gallery over for extra storage of books. A private entrance in Pitfield-street, with staircase in connexion, leads up to the librarian's departments on first and second floors.

The details throughout of pannelling and woodwork are charming, and the electric light fittings were generally admired.

The basement contains a book store under the libraries, a room for bookbinding, a staff common room, lavatories, &c. The woodwork is white enamelled, with distempered walls, the general effect of which is admirable.

In addition to the fireplaces which are placed in several of the rooms, the heating is generated by the exhaust steam from the electric light station.

Externally, T.L.B. bricks have been used, with buff terra-cotta dressings, and tile roofs.

Bearing in mind the recent visit of the Association to the New Cross Baths, additional interest attached to the present visit at Shoreditch. The baths and washhouses, which have been carried out from the designs of the joint architects, Messrs. Spalding & Cross and Mr.

H. T. Hare, include the following accommodation :—

First-class swimming bath, 100 ft. × 40 ft.
Second-class swimming bath, 75 ft. × 35 ft.
Twenty first-class (men's) full size slipper baths.
Thirty-six second-class (men's) full size slipper baths.
Five first-class (women's) full size slipper baths.
Fifteen second-class (women's) full size slipper baths.
An establishment laundry, with eighteen drying-horses and two centrifugal wringers.
Public wash-house, with fifty washing stalls and fifty drying-horses, and four centrifugal wringers and machinery.
Board room, 27 ft. 6 in. × 14 ft.
Caretaker's residence, superintendent's office, &c.

The buildings, which are rapidly approaching completion, have been carried out by Mr. C. Gray Hill, of Coventry, whose contract for the work amounted to 35,393*l.*

Books.

Unsere Hochschulen und die Anforderung des Zwanzigsten Jahshunderts. VON A. RIEDLER. Berlin : A. Seydel. 1898.

THIS pamphlet seems to be an outcome of the modern democratic movement for popularising University teaching. It is the development of a thesis that may be briefly stated thus :—The times of purely abstract and of purely practical education are over. The abstract scientist and the unscientific "practical" man alike are out of date. The Universities fail in answering the requirements of modern life, for they regard knowledge as in itself the end and not the means.

The author admits that the pursuit of knowledge for its own sake is excellent ; he claims, however, that it is insufficient. Etymologically, a University should be concerned with everything, and knowledge for practical purposes should be taught as well as abstract science. "There was no science," he says, "in the stone, the bronze, and the early iron ages [he has forgotten the copper age], but everything with which man occupied himself was technical"—an ingenious appeal to archæology, but scarcely in accordance with our modern knowledge of the psychology of early man, who busied himself with crude abstract speculations whenever the struggle for existence gave him a breathing space. Elsewhere the author says "people built and sailed in ships before the days of scientific navigation, quarried before geology, made steam-engines before the theory of heat was formulated," and so forth.

This is no doubt true ; but the contention of the author rests on an almost universally believed fallacy. By all means let technical schools be established and well endowed, and by all means get rid of the rule-of-thumb "practical" man as soon as possible. But the movement in favour of grafting technical schools on the existing Universities is (except for one reason) regrettable, for it leads the University away from what is its chief function. Strictly speaking a University should be an institution where laboratories, libraries, the advice of trained specialists, and, where necessary, pecuniary assistance is available for those pursuing original research in the various departments of knowledge. Their development into large finishing schools whether in the ordinary subjects of study, or in modern technology, would be subversive of their proper purpose and therefore an evil ; though unfortunately necessary on account of the inadequacy and depreciation of their endowments. If there were any prospect that a material increase in the available funds of the Universities would result from the establishment of technical schools within their precincts, then Herr Riedler's schemes might be considered ; but even then it is doubtful whether the ultimate loss might not be expected to outweigh the immediate gain.

Deshasheh. By W. M. FLINDERS PETRIE, D.C.L. The Fifteenth Memoir of the Egypt Exploration Fund.

THE memoir of the Egypt Exploration Fund never fails to be interesting ; perhaps this year it has even excelled itself. Three important tombs, and a large number of others of less importance, at Deshasheh, in the Fayum, have been examined. This is not the place to dwell upon the important ethnological results of the year's work ; especially the singular discovery of the survival of a savage custom of dismembering the bodies before interment, even when the early civilisation of the country was at its height. We are here concerned with the light that may be shed, by the remains discovered, upon the history of architecture ; and in this connexion the most important of the tombs investigated—that of Anta and his wife Minmert*—is of some interest. For Anta, besides numerous military duties, held the post of "Superintendent of the royal tomb"—that is, practically, court architect—fifty-five centuries ago. On the walls of his sepulchre are depicted scenes in his life and occupations ; the most interesting being the representation of the capture of a fortress. This is the earliest battle-scene known, and is a fine spirited composition, free to a large extent from the excessive conventionality that spoils so much of Egyptian art. The most remarkable of the other finds is the great group of statues found in the third of the three principal tombs. It is impossible to suppress a regret that this superb series could not be kept together in one museum, no matter how inaccessible, instead of being scattered between Cairo, London, Liverpool, and America. In the pathetic face of Nenkheftka the artist had a noble subject ; the head of his second statue is one of the most beautiful works by an Egyptian sculptor we have ever seen.

* Mr. Griffiths, in his chapter on the inscriptions, makes this name Mert Min ; but to our eye the hieroglyphs seem rather to favour the reading Minmert, which is adopted by Professor Petrie.

Specifications in Detail. By FRANK W. MACEY. London : E. & F. N. Spon. 1898.

THIS work is really something more than a guide to the writing of specifications, inasmuch as it attempts and in some measure succeeds in giving a great amount of practical information as to the details of construction on points which are not usually to be met with in text books. It may, therefore, be looked upon as a guide to the young architect in practical matters, quite as much as a model for specification writing. It indeed attempts to furnish the novice with the knowledge that he ought to possess before he sits down to write a specification. Regarded from the view of practical experience there are, however, many suggestions which are open to question, and which rather lead one to suppose the author has not had that amount of practical experience which would render him a reliable guide on all occasions.

To particularise all these would be impossible within the limit of space which we can devote to a review ; but we may give examples of some of these as a warning to the novice that he must not take everything as completely trustworthy because it may appear in the book. Some of the clauses included are rather amusing, as, for instance, the stipulation that "the contractor is to visit the site and make himself thoroughly acquainted with the nature and requirements of the case, so that no item may be omitted from his estimate, though not specifically mentioned in detail." He is also to read through the conditions of contract and to allow for any additional expense to which he may be put, owing to the special nature of the work, &c. It is hard to conceive any contractor of ordinary experience making a tender without observing these elementary precautions.

The author defines his standpoint by laying it down that the specification "should embody every item of work which may in any way affect the estimate ;" this is a perfectly good ground to take, but, assuming that the estimate is to be made by a number of builders in the ordinary way, we fail to see the utility of specifying that the estimate is to include for all work done previously to signing the contract. Many of the clauses, in fact, would be far better included, and should find a place, in the bills of quantities, if these are supplied. They are certainly out of place if the specification is to be viewed as the guide and director of the contractor and his workmen in carrying out the work. It is surely contrary to the usual and best practice to stipulate that "the contractor shall at his own expense make copies of all drawings, specifications, and details required for the work," even though "due facilities will be afforded for this purpose." Perhaps this is one of the devices by which some architects endeavour to make very small fees pay for the work they do. The statement that men's lodgings and travelling expenses are only required when a town contractor is required to do work in the country is clearly inaccurate, as it is not altogether an unknown occurrence for country contractors to do work in town, and to bring with them country workmen whose lodgings and expenses they arrange for without any stipulation in the specification.

Clause No. 20 of preliminary items seems to have got into its wrong place ; it is presumably meant only to refer to the mixing of concrete, with which it should therefore be included.

Clause 22, stipulating that the framing and putting together of all work is to be approved by the architect, if carried to its logical conclusion, would render the present book almost unnecessary. Surely the drawings and specification between them should accurately describe the way in which the work has to be framed and put together.

The wonderful word "best" is defined, but it would very seldom happen that the definition given would be adhered to.

We must protest in the interest of fair play against the advisability of including such a clause as "the contractor is to satisfy himself that there has been a sufficient amount taken in the bill of quantities for everything necessary to carry out the contract in accordance with the specification, the drawings, the dimensions, and the architect's requirements." That such a clause should even be suggested indicates that there must be some practitioners who, after supplying quantities and being paid for them, endeavour to shelve all responsibility for the accuracy of their work, a responsibility which is the sole justification for the rate at which the preparation of quantities is remunerated. If the man who supplies the quantities is not ready to take the responsibility for the accuracy of his work, one half the usual fees would be very ample remuneration. But we fear that it is too often the case that a high percentage of payment frequently carries with it very little accuracy. There are architects, we believe, who supply their own quantities and charge 2½ per cent., disclaiming all responsibility for work which highly-qualified quantity surveyors would be very pleased to do for 1½ per cent., and guarantee the accuracy of their work or pay for any losses that might be sustained by the builder in consequence of errors.

As examples of some of the practical knowledge in which the book is defective, we note that the statement of the lengths in which drain pipes are made by modern manufacturers is incomplete. The author's statement as to Professor Barff's process has unfortunately not been borne out in our experience. Flushing out drains with lime water is a futile device ; dry lime should be brushed through the drains. The sizes of cesspools which appear to be indicated are too large for good sanitary practice. It should be regarded as an axiom that when cesspools must be used they should be made as small as possible and frequently emptied. The use of Portland cement for underpinning is a very questionable expedient.

Space, however, forbids us to notice all the points which are open to question, and there is so much that is excellent in the book and so many things explained, of which the young architect would have much difficulty in finding a description in any other books, that we do not wish to convey an unfavourable impression as to the value of the work. We hope that wider experience, either of his own or of others, and careful attention to grammatical errors and printers' mistakes, will enable the author to make a future edition all that is admirable in such a work.

Spon's Architects' and Builders' Price Book, with Useful Memoranda and Tables. By W. YOUNG, architect. London : E. & F. N. Spon, Limited. 1898.

THE "Useful Memoranda and Tables" mentioned on the title-page are a distinctive feature of this work, and occupy a considerable portion of the book, placing it in a unique position in the group of price-books. They take in an immense variety of subjects, including Design, Construction, and Law, and will be found of great value in the hundred and one queries that are continually cropping up in an architect's practice. The alphabetical arrangement of these memoranda makes them easy of reference—an important point in works of this kind. Especial mention is due to the notes upon the various building stones, in which are given particulars of the composition, colour, size of blocks obtainable, the prices at quarry and in London, and a list of sundry works executed in the various kinds. These notes, which have been a feature in the work for

some years, will be found of great assistance in directing one's inquiries when in doubt as to the stone to be specified in a district which is possibly new to the architect.

In the "pricing" portion of the work, the mason has also received special attention, the author giving a very complete set of prices, which embraces varieties of stones which are not frequently found in price-books.

Another useful feature is the prime cost of carpenters' and joiners' materials, on pages 225-234.

No price-book seems complete without a chapter on "electric lighting," and this work is not behindhand in this respect.

While, as a price-book pure and simple, this work is not quite so complete as some others we have noticed, taken as a whole, it will be found useful on account of the variety of reliable information given.

The Law and Practice Relating to Workmen's Compensation and Employers' Liability. By ELLIS HILL, Barrister. London: Waterlow & Sons, Limited. 1898.

THIS is a more elaborate work than those on the Workmen's Compensation Act, 1897, which have recently come under our notice. It contains two parts—a text which contains a discussion of the various matters embraced under the term "liability of employers," and a second part, in which the several Acts of Parliament are given upon which now, to a large extent, the existing law is based. This is a book which can confidently be recommended to lawyers and to all those who desire to go into this subject exhaustively. At the same time, it must not be supposed that it is a voluminous work—it could not with advantage have been shorter, having regard to the object which the author has put before himself. So much has of late been written in these columns and elsewhere on this subject, that it is sufficient now for us to indicate our favourable opinion of this work.

The Standard Electrical Dictionary: a Popular Encyclopædia of Words and Terms used in the Practice of Electrical Engineering. By T. O'CONNOR SLOANE, A.M., E.M., Ph.D. Second edition, with Appendix to date. London: Crosby Lockwood & Son. 1898.

THE title to this work very fairly describes its object, and it can be commended as a concise and practical book of reference. Although it extends to nearly seven hundred pages, we have noticed hardly any matter that could be omitted with advantage; the definitions are short and accurate, and the illustrations will be useful to the general reader. The book would be improved if the fifty pages of appendix were incorporated in the text, but very complete indices minify this drawback. The only serious omissions which we have noticed are in connexion with the technical terms used in electric traction work. It would be an improvement in the next edition of the book if the various kinds of "ears" and "frogs" used in overhead construction were described, and also what a "controller" is, and how "nose-bar" suspension of a motor differs from "side-bar."

The Practical Management of Engines and Boilers. By WILLIAM BARNET LE VAN. London: Kegan Paul & Co., Limited. 1897.

THIS little book has been written to assist engineers and those in charge of machinery in acquiring a correct knowledge of all the more important matters relating to engines and boilers. It deals with the production and use of steam, and explains very clearly those leading principles without a knowledge of which it is impossible to manage machinery in an efficient manner.

Of course, the greater part of the information to be found in the book has already often been given elsewhere, but the author only claims to have arranged what is already known concerning the subject in such a way that it may be serviceable to the practical man who has no time to consult learned treatises written by authorities on these matters. In this respect Mr. Le Van has been quite successful, since the book contains in a concise form all the information on the subject that a practical engineer is ever likely to require.

Transactions of the Society of Engineers for 1897. London: E. & F. N. Spon. 1898.

THE volume of "Transactions" of the Society of Engineers for last year contains some half-dozen papers on various engineering subjects, all of which are of general interest. Mr. James P. Barber's notes on the proposed by-laws of the London County Council with respect to house-drainage was followed by a lengthy discussion, and forms a very good summary of all that can be said on the subject. Mr. R. E. Middleton read a paper on the "Pollution of Water and its Correction," which was awarded the Rawlinson Premium; and Mr. P. M. Faraday contributed a paper on the "Rating of Engineering Workshops," both of which will be read with advantage by those interested in either of these matters.

TRADE CATALOGUES.

MESSRS. HAYWARD BROTHERS & ECKSTEIN send us their illustrated catalogue of "improved circular and straight wrought-iron staircases," the special improvement claimed being that tread, riser and spandril of each step are made in one, giving greater stiffness than when the step is built up in three pieces. A large number of illustrations of straight and circular iron staircases are given, also general drawings and details of wrought iron windows and doors, &c.——Messrs. Hartley & Sugden (Halifax) send us the French edition of their new catalogue of boilers for low pressure steam heating, of which the English edition is in preparation. One special point in regard to these boilers is that no rivets are employed in them, all portions being welded, so that there is no danger of leakage from the effects of expansion and contraction. Both the pressure and the combustion in these boilers are automatically regulated. The fuel, as shown by the section of one of the boilers, is fed at the top into a central vertical reservoir, and descends as the lower portion is consumed on the grate. The reservoir can be made to feed the fire for from six to fourteen hours without attention, as required. The illustrations are beautifully executed, being in this respect quite above the average of illustrations to this class of catalogue.——Messrs. Lumby, Son & Wood (Halifax) send us the illustrated catalogue of their "Pioneer" boilers, made from Siemen's mild steel boiler plates, solidly welded together, without seam or joint. The outer jacket can be removed by taking out a few screws, leaving all the tubes open for cleaning or repair. The tubes are specially constructed with square lower ends in order that they may be put in and taken out with an ordinary spanner. All sizes are constructed to burn through the night without attention.——Messrs. Cole, Marchent, & Morley (Bradford) send us their illustrated catalogue of the different types of steam-engines, condensing plants, and other machinery constructed at their works. The engines described are of various kinds, and much reliable information is given concerning their capabilities to facilitate the selection of those best suited for any required purpose. We have seldom seen a catalogue so carefully compiled, and much practical knowledge regarding the class of machinery above referred to can be obtained from its pages.——Messrs. Dobsons & Curtis Bros., Limited, of Dublin, send us their illustrated catalogue of electric bells, telephones, medical supplies, &c. The numerous tables given to enable customers to send in estimates for fitting up electric bells and telephones in houses and offices of all sizes form a special feature which will be much appreciated by those firms which do only a limited business in electrical accessories. It will enable them with very little trouble to send in estimates for the latest systems and the most modern apparatus. The general intercommunication system for telephony described in this catalogue would be a suitable one for large warehouses, as each station can be called from every other one irrespective of the position in which the switch arm has been left by the last user. It has a great advantage over those systems in which it is necessary (when the conversation is finished) that the switch lever return to the home station stud either by hand or automatically.——The N.A.P. Window Company (Westminster) send us their large catalogue, which, as a catalogue dealing only with windows and their accessories, they believe, and we think with reason, to be unique. The catalogue consists of more than 450 pages, giving every information as to the various classes of windows made by the Company, with full constructive details shown in section. Of the merits of their patents in window making and sash hanging we have before spoken highly. We observe, as a kind of appendix to the catalogue, that the Company have secured the co-operation of Mr. G. C. Haité in the working of their artistic metal department, and some exceedingly clever sketches by him for wrought-iron grilles, &c., are included.

BOOKS RECEIVED.

ELEMENTARY CHEMISTRY.—By T. A. Cheetham (Blackie & Son).

PUBLIC WORKS IN LANCASHIRE, 1863-66. (P. S. King & Son).

Correspondence.

To the Editor of THE BUILDER.

FIRE AT NEW BRIGHTON TOWER.

SIR,—We have had our attention called by several people to a statement which has appeared in many newspapers that a serious fire had occurred at New Brighton. As architects for the building, we shall be obliged if you will kindly state that a fire did occur on the evening of Friday last, but that the fire originated on a workmen's scaffold 172 ft. from the ground. Several of the planks of this scaffold were burnt, and in falling on to the building below set fire to a little woodwork; but beyond this no damage whatever was done, and, in fact, with the exception of the workmen's scaffold that was burned, we doubt if more than 10*l.* worth of damage was done altogether. The fire will not in any way delay the progress of the works, or affect the stability of the structure.

Manchester, April 7. MAXWELL & TUKE.

The Student's Column.

THE CALCULATION OF STRENGTH OF MATERIALS AND RESISTANCES.—XV.

WE will proceed with some further examples of slightly more difficult character. In Fig. 1 we have a similar truss to that which we considered in our last chapter, but in this case we will suppose the weight distributed over the rafters instead of being concentrated at the apex. The weight being distributed over the rafters half of the load on each is carried to the apex of the truss, and half to the point of support on the wall. We have, therefore, the weight of the roof distributed at three points, forming three forces and with the reaction of each support making together five forces in all, as indicated by the arrows. Commencing as before, we letter the spaces between the lines indicating the action of the loads A and B, the space between the lines indicating the reactions C, the spaces left and right of the vertical lines denoting the direction of the loads and reactions at the points of support E and F, and the space enclosed within the truss G. Proceeding then, as in fig. 2, with the reciprocal diagram, and beginning with the forces which we know, we draw EC, CF to scale representing the magnitude of the reaction of the supports. We also draw to the same scale E A, F B representing the magnitude of the portions of the load carried directly by the supports, then A B represents on the same scale the magnitude of the load at the apex. We then draw A G and B G parallel to the sides of the truss, and C G parallel to the horizontal member or base of the truss. Then as before, A G, C G, B G, represent in magnitude and direction the forces in the various parts of the truss to which those lines are parallel.

We will next take a similar truss, but with a king rod, as shown in the diagram, fig. 3. Lettering our spaces as before A, B, C, D, E, F, G, our reciprocal diagram is also similar, but we find that A, F, and B, G, meet at same point, and from this we learn that there is no strain, from the weight of the roof, in the king-rod, as the line F, G, has no length, and is merely a point. The king-rod therefore supports the weight of the tie, but receives no stress from the roof load. From this we can proceed to the ordinary form of a king-post truss, as in the frame diagram, fig. 5. The load of the roof is in this case distributed over a number of points, namely, the apex, the points of junction between the rafters and struts, and the points of junction between the rafters and tie. The vertical loads at these points, together with the reaction of the supports, give us seven known forces whose direction is indicated by the arrows in our

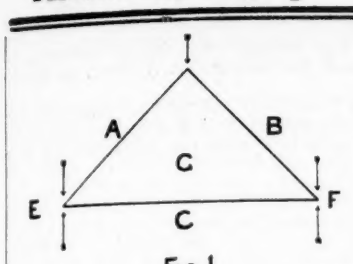


Fig 1

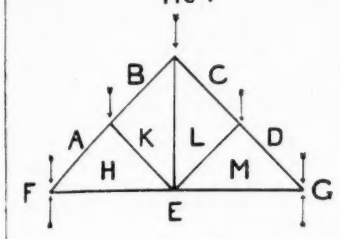


Fig 5

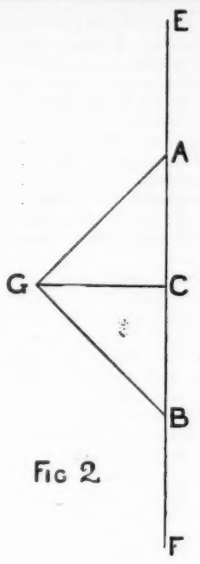


Fig 2

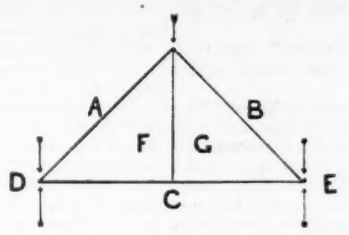


Fig 3

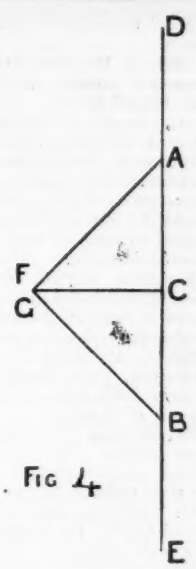


Fig 4

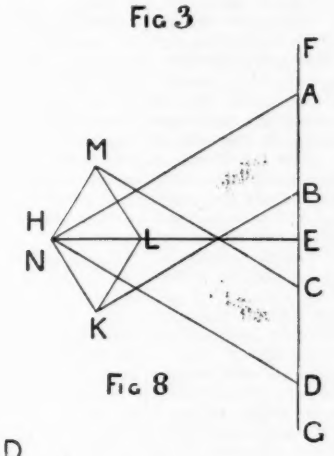


Fig 8

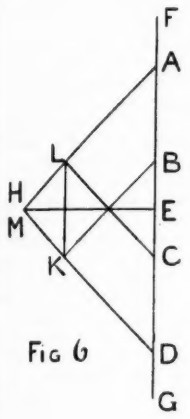


Fig 6

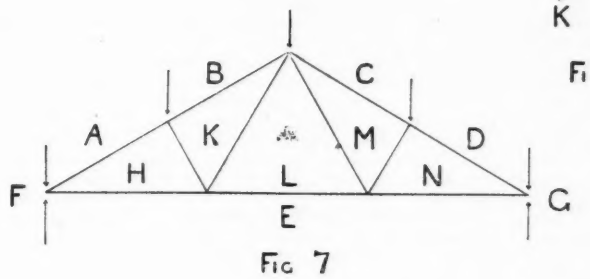


Fig 7

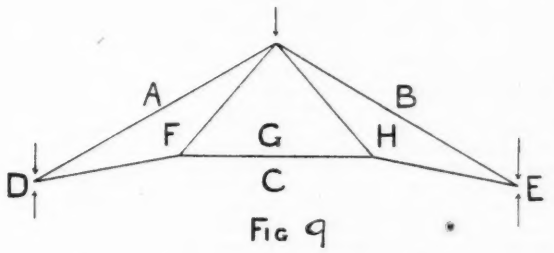


Fig 9

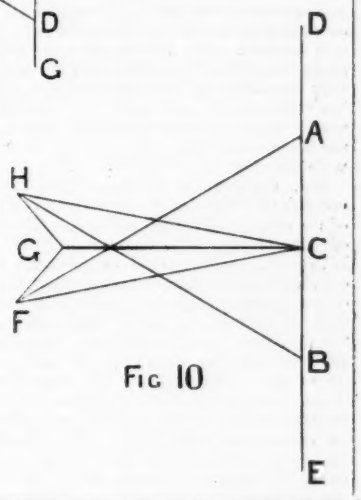


Fig 10

frame diagram. We accordingly letter our spaces A, B, C, D, E, F, G, H, K, L, M, and proceed with our reciprocal diagram shown in fig. 6, thus :—We set out the reactions at the points of supports to scale on the vertical line F E, E G, and the vertical loads F A, A B, B C, C D, D G, taking care that the lengths on the reciprocal diagram between any two letters, as F A, for instance, represent to scale the load in the frame diagram between the same two letters. Then, from A we draw A H parallel to the line between A and H in the frame diagram, from B we draw B K, C L from C, D M from D, and finally E H (or E M) and K L. Then as before the lines in the reciprocal diagram represent the stresses in the truss in magnitude and direction.

In fig. 7 we have another form of roof-truss, and one frequently employed in iron or steel roofs ; but the method of proceeding is exactly similar to those examples we have already worked. First we letter the spaces in the frame diagram, A, B, C, D, E, F, G, H, K, L, M, N ; then in our reciprocal diagram we draw FE, EG, representing to scale the reactions of the supports, and FA, AB, BC, CD, DG, representing the parts of the load ; then parallel to the members of the truss we draw AH, BK, CM, DN, EH, EL, EN (these last three are in the same horizontal line, as they refer to parts of the horizontal tie rod), HK, KL, NM, ML.

In fig. 9 we have an example with the tie-rod not continuously horizontal, but the working is exactly similar, and in our reciprocal diagram, fig. 10, we have three lines from C, CF, CG, CH parallel respectively to the various parts of the tie-rod.

The student will by this time, we hope, have understood the method of procedure, which we may summarise thus :—

1. Draw the frame diagram and indicate the direction and position of the loads and reactions.

2. Letter each space between the directions of the forces and between the parts of the truss.

3. Draw to scale, in the reciprocal diagram, lines representing the magnitude and direction of the known forces in the frame diagram lettering the ends of the lines by the letters which in the frame diagram are on each side.

4. Draw from the letters marked in the reciprocal diagram, lines parallel to the members of the truss beginning with the parts enclosing the truss and then continuing with the members internal to the truss. We note that in drawing lines parallel to the members of the truss, we have, first of all, the lines of indeterminate length, and that we must draw a second line to cut the first in order to fix the point common to both. For example, in fig 10 A F is undetermined in length till we draw C F cutting it in F, so with B H and C H, H G and C G.

OBITUARY.

M. CHARLES YRIARTE.—We hear with great regret of the death, on the 7th inst., after a very short illness, of M. Charles Yriarte, officially known as Inspecteur-Général des Beaux-Arts under the French Government, but known to all the world as the first literary writer on art of his day in France. M. Yriarte was born in 1832, and studied architecture in the atelier of Constant Dufeux. In 1856 he was appointed Inspecteur des Asiles for Vincennes and Vesinet. The suppression of this post subsequently had indirectly the effect of leading him into the path of work for which he was best suited, that of the literary treatment of artistic subjects. After having been the military correspondent of the *Monde Illustré* during the campaign of Maroc and the siege of Gaëta, he became editor of that review, and occupied the post until 1871. During the Franco-German war he was attached to the staff of General Ducrot. After the peace, he travelled in Dalmatia, Montenegro, and in the Balkans, whence he sent a number of interesting articles to the *Temps* and the *Revue des Deux Mondes*. In 1879 Jules Ferry appointed him Inspecteur des Beaux-Arts, in which capacity he took an active part in the organisation of the departments of "Histoire de Travail" and "Arts Plastiques" in the 1889 exhibition, and was on that occasion created "Officier" of the Legion of Honour. After travelling in Italy, he published a whole series of admirable and learned works on the art of the Renaissance : "Les Arts à la Cour des Malatesta ;" "Souvenirs d'un Sculpteur Italien au XV. Siècle ;" "Les Portraits des Borgia ;" "Paul Veronese ;" "Isabella d'Este ;" "Sabbioneta ;" "Autour d'un Concile ;" "Vie d'un Patricien de Venise au XVI. Siècle" (a work "couronné" by the French Academy); "Francesca di Rimini," &c. In 1896 M. Yriarte was a candidate for the Académie des Beaux-Arts, when he obtained eighteen votes, and would certainly have been successful at the next election had he survived. M. Yriarte was the artistic adviser and curator of Sir Richard Wallace, and also gave his assistance to the Duc d'Aumale in the arrangement of the Chantilly collection. He was an art amateur and student of a singularly refined critical quality of mind, and in his writings he combined an admirable literary style with research and accuracy. M. Yriarte some years ago contributed two or three important articles to this journal on subjects connected with French art ; we may mention especially the essay on the Château of Chantilly, to be found in the *Builder* of July 26 and August 2, 1884.

MR. JOHN THOMPSON.—All the architectural and building world of this country will hear with regret of the death of Mr. John Thompson of Peterborough, the well-known contractor, whose ability and energy in his calling has made the small town of Peterborough one of the greatest centres of building industry in the kingdom. Mr. Thompson died at his residence at Peterborough on Monday morning, at the age of 74. He commenced business as a contractor in a small way at Peterborough, where he was a sub-contractor under Mr. Ruddle of the same town, who carried out a good many works for Sir Gilbert Scott, Mr. Thompson doing the masonry and Mr. Ruddle the other trades. After a while the positions were reversed, from circumstances which may have been partly accidental ; Mr. Ruddle got into difficulties, and Mr. Thompson became the general contractor, Mr. Ruddle continuing to work with him. Before this change of position Mr. Thompson had executed some works for Sir Gilbert Scott where masonry only was required, the repairs to Hereford Cathedral being among these. The following are some of the principal works which Mr. Thompson carried out subsequently for Sir Gilbert Scott :—

Hereford Cathedral : general repairs.
Chester Cathedral : very extensive repairs.
Ripon Cathedral : oak-groined ceiling to nave.
Peterborough Cathedral : various repairs, underpinning, &c., extending over many years.
Glasgow University Buildings : (the tower completed after Sir Gilbert's death).
St. Mary's Church, Glasgow : (the tower completed after Sir Gilbert's death).
Crowland Abbey : west front.
Bridlington Priory Church : west front, comple-

tion of tower, north porch (finished by Mr. Oldrid Scott).

Melton Mowbray Church: general repair to masonry, chancel fittings, &c. (the latter under Mr. Oldrid Scott).

The works at Rochester, Salisbury, Exeter, Ely, Oxford, Gloucester, St. Davids, St. Asaphs, Durham, Chichester, Manchester, Worcester, St. Albans, and Wakefield Cathedrals were not carried out by Mr. Thompson during the period when they were under Sir Gilbert Scott's direction, but he was engaged on some of these buildings under Sir Gilbert Scott's successors. Under Mr. J. Oldrid Scott Mr. Thompson carried out many important works. Among these were Lichfield west front restoration, the nave of Bangor Cathedral, St. Michael's, Coventry (extensive repairs to stonework, &c.); Holy Trinity Church, Coventry (repairs to spire), St. John's Gateway, Clerkenwell (extensive repairs and new roof to hall), and the strengthening of the central tower of Lambourne Church. The latter was a difficult piece of work, which he accomplished very successfully. The piers were crushed and the walls above were much rent, and great care was required in their treatment. As our readers are all aware, Mr. Thompson carried out the recent repair and rebuilding of the north gable in the front of Peterborough Cathedral, and the strengthening of the great arch under it, also a very difficult piece of work, carried out in a thoroughly satisfactory manner. Mr. Thompson's workshops at Peterborough were very extensive, and filled with models of mediæval detail for the assistance of his masons and carvers. Mr. Thompson was largely engaged in public affairs connected with his district, and was four times Mayor of Peterborough. He was in all his relations an eminently business-like and trustworthy man, and was much esteemed and respected for his general character as well as in connection with his work as a builder.

MR. GEORGE WILLIAMS.—The *Times* "deaths" column of Wednesday contained the announcement of the death at Casanova, Fauquier County, Virginia, of Mr. George Williams, an architect formerly of Liverpool, and a pupil of Decimus Burton. He commenced practice in Liverpool in the earlier part of the century as junior partner of his brother, the firm of Arthur & George Williams being at that time in very large practice. He continued the practice after the elder brother's death, laid out two parks near Liverpool and built many residences in them. Among his other works were a large mansion in Oxfordshire for Sir William Brown, a very graceful villa in the Italian style at New Brighton for Mr. Ewart, the then member for Liverpool, and numerous other buildings in various parts of the country. He was an amateur astronomer of some accomplishment, and had an observatory with a fine equatorially-mounted telescope constructed on the roof of his house. He was also a beautiful and most accurate architectural sketcher in the old-fashioned precise outline style, and before entering on practice had made a tour in Greece and brought home many sketches of ancient buildings and details—a course of architectural study not so common sixty years ago as now. He retired from practice a good many years ago, and died at an advanced age at the residence of one of his sons in the United States. Mr. Williams was son of the late Lieut.-Colonel Monier Williams, and brother of Sir Monier Williams, the well-known Oriental scholar. Among his articled pupils (on whose instruction he bestowed conscientious attention) was the present editor of this journal, who can remember Decimus Burton, a good-looking old gentleman with a very "distinguished" manner, coming to the office to pay a visit to his former pupil.

GENERAL BUILDING NEWS.

ST. MARY'S CATHEDRAL, EDINBURGH. — The south aisle of the choir, from which it is separated by wrought-iron grilles, has now been formed into a separate chapel, and enclosed with an elaborate wrought-iron grille and gates at the diagonal arch entering off the south transept, and at the eastmost bay by a curtain of crimson silk attached to a wrought-iron freize, which is a continuation of the wrought-iron work dividing the choir from the chapel. An altar of "Jaune Jaspé" marble, with a reredos of "Rouge Jaspé" has been erected about 18 in. in front of the east end of the aisle. The altar and reredos, which are of Romanesque design, are raised on three steps of marble. Two of these steps rise from a platform of red marble mosaic, bordered by a marble step 6 in. above the stone floor. All the steps are of "Campan melangé." The altar is panelled on front and sides, and has a moulded base and a moulded and enriched cornice. The centre panel contains an enriched cross. Over the centre of the reredos rises an enriched panel containing the letters I. H. S. On the cornice of this rests a massive bronze cross, elaborately chased in Romanesque detail, and on small marble blocks projecting above the cornice over the pilasters are bronze candlesticks with elaborate ornaments, similar to that on the cross. Two bronze flower vases are placed between the cross and the candlesticks. The altar rail is of polished walnut supported on bronze standards. The altar and reredos are built solid, and the marble being rich in colour makes a very effective grouping with the stained-glass windows beneath which it is placed. A double piscina of polished freestone has been inserted in the south wall. The chapel is seated with chairs, and provided with substantial mats and suitable kneeling hassocks. The electric light has been introduced with groups of lamps above the capitals of the piers. The work, which has been seven months in progress, has been carried out from designs by Mr. G. Henderson, of Messrs. Hay & Henderson, architects. The marble work has been executed by Messrs. Field & Allan; the metal work by Messrs. Singer & Sons, Frome; and the hangings by Messrs. Whytock & Reid.

METHODIST CHURCH, ST. IVES, CORNWALL.—St. Ives Methodist New Connexion Society are about to erect a new church, with school buildings, &c., in Bedford-road. The spire will rise to a height of 82 ft. from the ground, while the length of the church will be 84 ft., and the width across the transepts 53 ft., providing accommodation for 450 people in the body and 100 in the gallery over the entrance lobby. The church will have open-timbered roof of pitch-pine; the seatings and finishings will also be of pitch-pine; and the floor will be of woodblocks laid on concrete. Ministers' and choir vestries will be provided. The school buildings will adjoin the church, and will comprise lecture-hall, class-rooms, lavatory, kitchen, and large school-room, with open pitch-pine roof. The plans and specifications for the buildings have been prepared by Mr. J. W. Firth, architect, of Oldham, and the contract has been let to Mr. J. R. Sandry, St. Ives.

FREE CHURCH, GRANTOWN, N.B.—Messrs. Brown & Watt, architects, Aberdeen, have been commissioned to carry out a new scheme of church building for the Free Church, Grantown-on-Spey. The building will contain about 500 sittings. The front elevation will be built of freestone from the Morayshire quarries.

SCHOOL EXTENSION, TUEBROOK, LIVERPOOL.—The foundation-stone of the extension of St. John Baptist's Day Schools, Tuebrook, was laid on the 2nd inst. The scheme, now being carried out in sections, is as follows:—In the boys' department, provision of new class-room, lavatory, and cloak-room, and an enlargement of the class-room; in the infants' department, enlargement of the school-room, and provision of new babies' room, new cloak-room, and lavatory accommodation; in the girls' department, enlargement of the school, new class-room, and enlargement of present class-room for use as cookery school, with scullery, store, &c., and separate porch for entrance. New lavatory and cloak-room are also provided. The drainage scheme has been revised, and the school generally brought up to date. Accommodation will thus be provided for 244 additional children, making a total of 900. The work is being carried out from the plans and under the superintendence of Messrs. Woolfall & Eccles, architects, Liverpool, the contractor being Mr. W. Knight, of Tuebrook. The extensions will cost 1,700*l*.

NEW WING, ST. MATTHEW'S SCHOOLS, BLACKBURN.—A new north wing is to be added to the buildings forming St. Matthew's schools. Mr. Jas. Bertwistle is architect.

COMMERCIAL SCHOOL, WELLINGBOROUGH.—At a meeting of the Wellingborough Grammar School Governors, the Clerk reported that the plans of the new Commercial School had been approved and returned. It was resolved that the architects (Messrs. Brown & Fisher) be instructed to invite tenders from Wellingborough builders for the erection of the school.

THEATRE, MORECAMBE. — The new Royalty Theatre, Morecambe, was opened on the 4th inst. The building is situated at the corner of Market-street and Cheapside, and has been designed by Mr. F. Matcham, of London. The interior has been decorated by Messrs. J. & R. Dean, of Birmingham. There is seating accommodation for about 1,200.

POLICE STATION, WORKSOP.—On the 5th inst. the new police station at Worksop was used for the first time for the purposes of the County Court. It is built on the site of the old premises, and has a stone frontage to Potter-street, and comprises a court room, 51 ft. by 25 ft., superintendent's residence, charge room, magistrates' retiring room adjoining the court room, single constables' quarters, sergeants' house, four ordinary and one associated cell, prisoners' airing yard, constables' drill yard, coach house, stable, constables' assembly room, &c. The architect was Mr. E. Purnell Hooley, the County Surveyor, and Messrs. Ilett have been the contractors.

ALTERATIONS TO THEATRE, PRESTON.—The plans for the proposed alterations to the Theatre Royal, Preston, prepared by Mr. John P. Briggs, of London, were approved at the meeting of the Town Council on the 31st ult.

PROPOSED INSTITUTE, FECKENHAM.—Plans have been prepared by Mr. J. Johnson, architect, Redditch, for institute premises at Feckenham. The building will consist of a porched entrance and one large room, 50 ft. by 22 ft., with sliding partition. At the back of this room will be a corridor, leading into the kitchen, lavatories, store-room, and also a room which is at present used as a fire-engine station. The plans are to be submitted to the County Council.

CLUB BUILDINGS, WESTGATE-ON-SEA, KENT.—A new Tradesmen's Club in Ethelbert-square, Westgate-on-Sea, has just been opened. It is a two-story building. The architect was Mr. C. J. Reeve, of Margate, and the builder Mr. A. Wing, of Birchington.

CHURCH HALL, HUNTINGTOWER, PERTHSHIRE.—A new church hall at West Huntingtower is to be built in connection with the Tibbermore Parish Church. The hall is to be erected on a piece of ground adjoining the public road to Methven, and will consist of a hall, 54 ft. by 31 ft., with retiring rooms, the length of the whole building being 73 ft. and the breadth 35 ft. The plans have been prepared by Messrs. James Smart & Son, Perth, and the work will be carried out under their supervision. The following are the successful contractors:—Mason work, J. & P. Keay, Methven; joiner work, T. D. Falconer, Perth; plumber work, William Frew & Sons, Perth; slater work, James Buchan, Perth; plaster work, Alexander M'Ritchie, Dundee.

PUBLIC HALL, ALNESS, N.B.—This building was opened on the 5th inst. Internally, the hall is 57 ft. by 29 ft., with a gallery of 13 ft. The platform extends the whole width. To the rear are two retiring rooms. The architects were Messrs. Maitland & Sons, Tain.

NURSES' HOME, KEIGHLEY WORKHOUSE.—A new nurses' home has just been erected at the Keighley Workhouse Infirmary. The new building was planned by Messrs. John Judson & Moore, architects, to accommodate nine nurses.

BATHS, SPRINGBURN, GLASGOW.—The new Corporation Baths for Springburn have been erected at the head of Kay-street. There are two entrances. The one on the right leads to the swimming pond and hot baths for men, of which there are fifteen first-class and thirteen second-class. The swimming pond is 75 ft. by 35 ft. There are dressing boxes all round it, foot-baths, spray-rooms, and a gallery overhead. The offices are in the centre, between the two vestibules. At the left-hand entrance there is a rise of 11 ft. to the washing house, which measures 93 ft. by 38 ft. There are thirty-four washing stalls. A small private washing house lies off the larger public one. Here also are five hot baths for women. The roof over the swimming pond is constructed of steel principals. The plans were prepared under the superintendence of Mr. A. B. Macdonald, City Engineer.

WORKMEN'S INSTITUTE, ABERTILLERY.—The cost of the buildings now completed in connexion with the new Powell's Tillery Workmen's Institute, including furnishing, is nearly 3,000*l*. The building is faced with the local Tillery Co.'s pressed buff faced bricks, with pilasters, moulded cornices, and other dressings in Llantarnam pressed red faced bricks. In the basement are the heating chamber, &c. On the ground floor are the billiard-room, the public reading-room, lending library, lavatories, &c. On a mezzanine floor are provided two slipper baths for the use of ladies. On the first floor are three committee rooms, which can be converted into one room to accommodate 200 people, and there are also smoke-room, lavatories, and slipper baths for gentlemen. The top story is devoted to caretaker's apartments. The scheme embraces a swimming-bath and gymnasium, for which room is provided on the site, but this has been deferred. The building was erected by Mr. D. J. Davies, contractor, Newport, from plans prepared by Mr. F. R. Bates, architect, Newport.

INFECTIOUS DISEASES HOSPITAL, NEAR BRIGHOUSE.—When it was decided to re-construct and extend the buildings at Thornhills, Clifton, Brighouse, Messrs. Sharp and Waller, architects, Brighouse, were engaged to surpervise the work, and the plans they submitted were approved by the Local Government Board. The general idea of the architects has been to utilise the old corrugated iron buildings for the treatment of scarlet fever, diphtheria, and similar diseases. In order to comply with the regulations it has been necessary to dispense with the central connecting portion, and to adapt the outer wards for the isolation of persons suffering from these diseases. At a higher level of the grounds is located a new isolation ward, where also typhoid cases will be treated. Altogether accommodation is provided for about fifty patients. The floors of the typhoid fever section are inlaid with polished hardwood blocks, and the floors of the older portion of the hospital are covered with polished linoleum. Between the wards, in each case, there is a nurses' room, with windows which communicate with the two adjoining wards. Baths and lavatories are placed in close proximity to all the wards. The administrative block has a separate approach from a footpath which runs behind. The front of the ground floor contains a room which has been arranged for the Medical Superintendent. Across the vestibule is a sitting-room for the matron, and behind there are nurses' room, store-room, cooking kitchen, and scullery. On the upper floors there are eight bedrooms for the accommodation of the staff. In the basement there is a cooking kitchen, &c. Attached to each side of the hospital buildings is a verandah, with glass roof. In various parts of the grounds are located buildings for quarantine purposes. The contractors who have erected the new buildings have been as follows:—Masons' work, drainage, roadways, and boundary walls, Mr. T. C. Dawson, Lightcliffe; joiner, Mr. T. A. Hirst, Owler Ings; plumbing, Mr. C. Candelatt, Brighouse; painters, Messrs. Hirst & Barraclough, Brighouse; plasterer, Mr. A. Firth, Brighouse; patent glazing, Messrs. T. W. Helliwell & Co., Brighouse.

BATHS, HOLBECK, LEEDS.—The third public bath erected by the Leeds Corporation was opened on the 2nd inst., in Holbeck-lane. The building has been built of pressed bricks, with stone dressings. The central portion is three stories high, with a one-story wing on each side. The floor of the building is raised about 5 ft. above the ground level, and the two entrances are approached by stone steps. Over the offices is the manager's house. The second-class bath has a water area of 75 ft. by 30 ft., and the first-class bath an area of 65 ft. by 24 ft. There is a spectators' gallery on three sides of the second-class bath-room. Altogether about 500 spectators can be accommodated. A score of slipper baths are provided. Five of them are for ladies. A waiting-room, store-room, and attendants' room have been provided. The cost of the Holbeck baths is about 8,500*l.* Mr. Walter Hanstock, of Leeds and Batley, was the architect, and the contracts were let as follows:—For masons' and bricklayers' work, Mr. J. T. Wright; carpenters' and joiners' work, Messrs. G. Oakes & Sons; plumbers' work, Messrs. W. and C. Barrand; engineers' work Messrs. H. Braithwaite & Co.; fire-proofing, Mr. McFarlane; ironfounders' work, Messrs. W. Horsfall & Co.; plasterers' work, Messrs. F. Branton & Co.; slating, Mr. W. Shevill; patent glazing, Messrs. W. Helliwell & Co.; and painting, Mr. Jonas Gaunt.

UNIONIST CLUB, SWINDON.—A Conservative and Unionist Club, situate in Fleet-street, New Swindon, has just been opened. While the front elevation is in Bath stone, with piers, columns, and dressings of the same material, the club itself is built of local red brick, with slated roof. Inside there are a bar, card-room, concert-room (which will seat 250 persons), billiard-room, reading-room, skittle alley, &c. The architects were Messrs. W. Drew & Sons, of Swindon, and the builder Mr. C. Williams, of Swindon.

ARCADE, NORWICH. — The Old Royal Hotel, Norwich, and the surrounding premises, are being converted, it is stated, into an Arcade. The main line of the Arcade will run from the Market-place to Castle-street, at both of which points there will be entrance gates. The third entrance will be at a point about midway down White Lion-street. Messrs. J. Youngs & Son have signed a contract for the execution of the work, and Messrs. G. J. Skipper & F. W. Skipper are the architects.

RESTORATION OF ST. PAUL'S CHURCH, BIRKENHEAD.—St. Paul's Working Men's Church, Birkenhead, has been reopened. The roof has been lined on the inside with selected pitchpine boards, while the windows have been filled in with cathedral glass. The interior has been decorated from the designs of the architect, Mr. J. C. Ogle, of Birkenhead. A new staircase has been provided, connecting the clergy vestry with the rooms under the church. A lavatory has also been included in the scheme.

OFFICES, WEST HARTLEPOOL.—The new offices for Messrs. Furness, Withy, & Co., Limited, at West Hartlepool, which have been in course of construction during the past twelve months, are now completed. The main entrance is in George-street. There are on the ground floor seven private rooms and the general office, a room about 50 ft. by 25 ft. On the first floor is another room of the same size, while another room of equal size is on the second floor. The remainder of the first floor is occupied by a dining-room, serving-room, lavatories, and other conveniences. There is a kitchen on the second floor for use in connexion with the dining-room, and also a caretaker's residence, the remainder of this floor being occupied by muniment rooms for papers, &c. There is a basement to the whole building. The offices are heated by hot water on the low-pressure system. A strong room is placed in direct communication with the secretary's room. A telephone and typewriting room is situated on the ground floor. The contractors are Messrs. Jos. Howe & Co., of West Hartlepool. The marble work has been executed by Messrs. John Lowes & Sons, of Durham. The architects are Messrs. Barnes & Coates, of West Hartlepool and Sunderland.

BUSINESS PREMISES, MOORFIELDS, E.C.—On the 5th inst. Mr. Raphael Tuck laid the foundation stone of Raphael House, the new premises of Messrs. Raphael Tuck & Sons, in Moorfields. The building will have frontages on Moorfields, White-street, and Tenter-street. Mr. W. H. Nash is the architect.

MAR LODGE.—The new residence for the Duke and Duchess of Fife is rapidly approaching completion. Fine picked specimens of woods from the neighbouring forests have been largely used in panelling, or in making balustrades or doors, and some of the pine and birch is quite equal in beauty to Oriental timber. For the entrance hall, staircase hall, large and small dining-rooms, Messrs. A. J. Arrowsmith & Co. are supplying the oak parquet flooring. Mr. A. Marshall Mackenzie, of Aberdeen, is the architect, and Messrs. McRobbie & Milne are the contractors.

BANK BUILDINGS, STRATFORD-ON-AVON.—Lloyds Bank (Limited) are about to erect new bank buildings upon the site of their present premises at the corner of Bridge-street and Union-street, Stratford-on-Avon. The plans of the new bank have been prepared by Mr. J. A. Chatwin, of Birmingham The building will provide a banking-room next Bridge-street, with consulting and waiting rooms, strong rooms, and residence for the manager. The elevations in Bridge-street and Union-street will be of Bath stone, and the principal entrance will be at the corner of the streets named, with oriel window projecting over, and surmounted by a short spire. The extent of frontage to Bridge-street will be 42 ft., and that to Union-street 52 ft., and the height to ridge will be 51 ft., with a slightly lower elevation to Union-street. There will be six windows on the ground floor of the banking room, which will be 38 ft. by 20 ft. The builders are Messrs. Collins & Godfrey, of Tewkesbury.

MARKET, CARDIFF.—At a meeting of the Cardiff Property and Markets Committee recently, the Borough Engineer submitted plans of the proposed fish and fruit market in The Hayes, which he estimated would cost 16,000*l.* Several members questioned whether such an expenditure would be remunerative. The engineer was instructed to reconsider the matter, and report at the next meeting whether the estimate could not be reduced.

PLANS OF NEW BUILDINGS, ABERDEEN.—The Plans Committee of the Aberdeen Town Council met on the 7th inst., when fourteen plans were submitted, representing a total value of 25,000*l.* The majority were passed, one or two being deferred meantime. The only noteworthy building on the list was the new Free John Knox Church, which is to be built on the site of the present church at a cost of 4,500*l.*

UNDERGROUND CONVENIENCE, RICHMOND.—An underground convenience in George-street, Richmond, has just been opened. The estimate of the cost provided for the outlay of a sum of 1,600*l.*, and the contract was entrusted to Messrs. Soole & Son, of Richmond, the work being completed within the estimated price. It is divided into two parts, one for ladies and the other for gentlemen. The convenience was designed by Mr. Brierley, the Surveyor to the Council, and has been carried out under the supervision of Mr. F. B. Drake, the chief assistant in the Surveyor's department.

NEW RAILWAY STATION, ELGIN, N.B.—A new station is about to be erected at Elgin by the Great North of Scotland Railway Company. The new buildings will be constructed of the sandstone of the district. The architect is Mr. P. M. Barnett, Engineer to the company.

CHURCH HALL, MOSELEY.—The new church hall erected at the corner of the Alcester- and Chantry-roads, Moseley, by the local Presbyterians was dedicated on the 1st inst. Messrs. De Lacy Aherne & McKewan, of Birmingham, are the architects.

SANITARY AND ENGINEERING NEWS.

SEWERAGE SCHEME, FARNWORTH.—Colonel A. C. Smith, R.E. Inspector to the Local Government Board, held an inquiry on the 17th ult. into an application of the Farnworth District Council to borrow 22,160*l.* for works of sewerage and sewage disposal, and 8,000*l.* for works of private street improvement. Mr. B. Crossley, Clerk to the Council, gave evidence as to the street improvements to be carried out, and Mr. W. J. Lomax, C.E., of Bolton, of the firm of Lomax & Lomax, of Manchester, the Council's Engineer, described the proposed works of sewerage and sewage disposal, stating that the Mersey and Irwell Joint Committee required the Council to improve their effluent. In order to accomplish this it was intended to considerably alter the present precipitation tanks, to construct a range of six roughing filters with an area of 1,800 square yards, and a similar range of Polarite filters, also 1,800 yards in extent, which will be intermittently and automatically aërated by Messrs. Lomax's system. The purified effluent from the filter tanks would be passed on to land to meet the requirements of the Local Government Board. The population to be dealt with at the proposed works is about 26,000. There was no opposition to the scheme.

PUBLIC IMPROVEMENTS AT RHYL.—On the 6th inst., at the Town Hall, Rhyl, a Local Government Board Inquiry was held before Colonel Durnford, R.E., as to the Rhyl Urban District Council's application for power to borrow 1,500*l.* for the purpose of carrying out sea defence works, and the construction of a promenade 20 ft. wide, at the extreme end of the marine drive, Rhyl. Mr. A. Rowlands (town clerk) and Mr. Robert Hughes (town surveyor) explained that of late years the sea had been making such inroads on the eastern foreshore at Rhyl that the Council considered it was their duty to construct permanent sea defence works in order to prevent the sandhills from being washed away.

PROPOSED MERSEY ROADWAY BRIDGE.—At a meeting of the Liverpool Chamber of Commerce on the 5th inst., Mr. John J. Webster, engineer, of London, explained a scheme which he and Mr. J. T. Wood had prepared for carrying a roadway bridge, 62 ft. wide, over the Mersey from Liverpool to Birkenhead. The proposal is to start in St. George's-crescent, Liverpool, passing over the site of the buildings between and at the rear of the James-street and Red Cross-street properties, turning to the left along Strand-street, then crossing the Lock Pit between Wapping Basin and Salthouse Dock at an angle, and on to the riverside south of the Manchester Dock, where the east abutment of the proposed bridge would be erected. From this position the bridge would cross the river and be carried to the corner of Hamilton-square, Birkenhead. The estimated cost of land and bridge was 2,750,000*l.* A resolution was adopted to the effect that such a bridge as that described would be a great advantage to both communities and would materially assist the development of the port.

STAINED GLASS AND DECORATION.

WINDOW, ST. PETER'S CHURCH, MOWBRAY, SOUTH AFRICA.—A large single lancet window has just been completed for St. Peter's Church, the subject of the miraculous draught of fishes filling the central portions, with angels holding scrolls in base and canopy. The work was executed by Messrs. F. Holt & Co., Warwick.

STAINED GLASS WINDOWS, TRURO CATHEDRAL.—Two windows have just been filled with stained glass in the north choir aisle of Truro Cathedral. The subjects form links in the historic series, illustrating the progress of the Church, designed for the cathedral. The windows are the work of Messrs. Clayton & Son.

WINDOW, HUNNINGHAM CHURCH, LEAMINGTON.—The stonework of the east window in this church has been taken out, and a new two-light window, with tracery, erected and filled with stained glass. The work has been carried out by Messrs. Holt & Co., Warwick.

FOREIGN.

FRANCE.—M. Adrien Chancel, who is this year the sole candidate for the prize founded by the late architect Duc, with the view of encouraging architectural studies, has submitted to the Académie des Beaux Arts the drawings of the Hôtel de Ville, which he has built at Ivry-sur-Seine, and the cartoons for the decorations for the new Salle des Fêtes at the Palais de l'Elysée. The award is not made yet.——The celebrated Velléda statue by Maindron has been withdrawn from the Luxembourg garden, and its place taken by the statue of Margaret of Anjou.——An exhibition of the works of Daniel Vierge is open in the Salons de l'Art Nouveau, 28 Rue de Provence.——The frescoes by Chasseriau, which we mentioned as recently removed from the Cour des Comptes, have been placed in a gallery of the Louvre.——It is probable that the works for the prolongation of the Orleans line to the Quai d'Orsay will necessitate the displacement of the statue of Voltaire near the Institute, which will then be removed to a site near the Pantheon, to form a pendant to the statue of Rousseau.——M. Guilbert, architect, has been commissioned to carry out the commemorative chapel which will be erected, in Rue Jean Goujon, on the site of the bazaar that was burned. The first stone will be laid on May 4, the anniversary of the catastrophe.——The Nord Railway Company has established a service of cheap trains twice a day to Chantilly, to facilitate access to the museum.——The construction of the remaining portion of the line from Dieppe to Havre will be proceeded with shortly.——At the ancient chapel of the Chartreuse, at Saint-Croix-en-Forez, there have been found some curious paintings of the date of fourteenth century, forming four large pictures representing religious ceremonies connected with the funeral of Thiebaut de Vassalieu, who died in 1327.——M. Deuilly, the curator of the Lille Museum, has discovered in a storeroom in the Palais des Arts, a painting representing the "Repose in Egypt," and bearing the signature of Correggio.——A new bathing establishment on a very large scale is to be built at Vichy.——The Municipal Council of Lyons, following the example of Paris, is about to appoint a Committee of "Vieux Lyon," to look after the ancient remains in the city and draw up an inventory of them, and secure the preservation, by drawing or photography, of a record of those which must necessarily be removed.——A monument of the Crusades is to be inaugurated at Clermont-Ferrand on June 26; M. Heill is the architect and M. Gourgouillon the sculptor. It will consist of a granite fountain surmounted by a bronze statue of Pope Urbain II.——The death is announced, at the age of 47, of the sculptor Alfred Lanson, after a long illness. This talented artist carried off the Grand Prix de Rome in 1876. He was the pupil of Jouffroy and of Aimé Millet. He was the author of a good many remarkable portrait busts, notably one of M. Felix Faure, and of various interesting works in ideal sculpture, one of which, "Salambô," is in the Luxembourg, and another. "Judith and Holofernes," is at the Tuileries. We may mention also among his works the figure of Cardinal Richelieu at the Sorbonne, and a "Leda" in marble, and a "Jeanne Darc" in bronze, exhibited in the Champs Elysées Salon a few years ago.——The death is announced also of M. Paul Vibert, architect, of Paris, at the age of sixty-eight, and that of Jacques Pilliard, a painter of religious subjects, whose principal works are in the museums of Bordeaux, Lyons, and Grenoble, and who died at Vienne at the age of eighty-seven.

MISCELLANEOUS.

THE SANITARY INSTITUTE.—At an examination in practical sanitary science, held in Birmingham on April 1 and 2, four candidates presented themselves. The following two candidates were granted certificates in practical sanitary science: — Woods, W. H., Belper; Fleming, R. P., Dundee, N.B. At an examination for Inspectors of Nuisances, held in Birmingham on April 1 and 2, thirty candidates presented themselves. The following ten candidates were certified, as regards their sanitary knowledge, competent to discharge the duties of Inspectors of Nuisances:—Bannington, B. G., Coventry; Barnes, W., Aston, Birmingham; Bird, G. J., Tamworth; Braley, F. C., Leicester; Bromly, A., Sutton Coldfield; Cooper, C. W., Liverpool; Gough, T., Everton, Liverpool; Hudson, T., Silsden, near Keighley; Merrifield, F., Sutton Coldfield; Nichol, J., Brayton, viâ Carlisle.—On the 6th inst., at a meeting of the Institute at the Parkes Museum, Margaret-street, W., Mr. R. E. Middleton delivered a lecture, entitled "The Desirability of Making Watershed Areas and Sanitary Districts Coterminous." The lecturer said that consequent on the increase in the size of our large towns the demand for water had led to the upsetting of all preconceived ideas as to the sources from which supplies should be obtained. All the evidence as to water supply and water pollution showed that if areas of supply were to be safeguarded, if rivers were to be preserved from pollution, if the millowners were to obtain the utmost benefit of the power at their disposal, but without injury to the general interests of the population, and if the navigation, if there be any, was to be maintained, the present system of divided authority should be abandoned and a combined general policy should be substituted for it. At present every authority was in conflict with its neighbour. He was strongly in favour of dividing the country into watershed areas, for purposes of water supply and drainage, which areas could be coterminous with sanitary districts.

INSTITUTE OF CERTIFIED CARPENTERS.—The annual dinner of this Institute was held at the Bridge House Hotel on the 2nd inst.; Professor Banister Fletcher, President, in the chair. Among the toasts, Mr. Turville, Vice-President, proposed the "Carpenters' Company" and Mr. B. J. Jacob proposed the "Institute of Certified Carpenters," and referred to the antiquity of the craft. Mr. T. M. G. Lloyd, the Hon. Secretary, in replying, dwelt on the necessity of mutual assistance and advice for securing improvement and raising the status of the craft. Mr. J. D. Macnan proposed "The Architectural Profession" (responded to by Mr. H. P. Fletcher), and Mr. W. M. Dixon proposed "The President." Songs and recitations were given between the toasts. In the course of the evening the President presented a testimonial, accompanied by a marble and bronze timepiece, subscribed for by members of the Institute, to Mr. J. Herrin, in recognition of his services as Hon. Secretary.

WORKMEN'S COMPENSATION INSURANCE.—The Guardian Fire and Life Assurance Company, which has hitherto confined its business to fire and life assurance, is now issuing accident policies of all kinds, and is prepared to consider proposals for the insurance of the entire liability of employers under the Employers' Liability Act and the new Workmen's Compensation Act without any limitation. The "Guardian" has a paid-up capital of 1,000,000*l.* and a subscribed capital of 2,000,000*l.*, and the latter with the fire funds 526,850*l.*, amounting in total to 2,526,850*l.*, is the security for the policy-holders of the company generally, including accident policy-holders.

LONDON GEOLOGICAL FIELD CLASS.—Professor Seeley, F.R.S., will begin the summer course of lecture-excursions with the London Geological Field Class on Saturday, April 23. The subject of the series will be the Physical Geography and Geology of the Thames and its Tributaries. This is the thirteenth annual course. Mr. R. H. Bentley, 43, Gloucester-road, South Hornsey, N., is the Honorary Secretary to this Society, which gives a systematic course of teaching in the open country.

THE ALEXANDRA PALACE.—After having remained closed for nine years past the Alexandra Palace, Muswell Hill, was reopened yesterday week, as a place of popular resort. The original building was constructed mainly with materials from the Great Exhibition of 1862—Captain Fowke, R.E., architect—and included one of the two domes, dodecagonal at base and 160 ft. in diameter. Opened on May 24, 1873, it was destroyed by fire a fortnight afterwards. It was speedily rebuilt, and again opened on May 1, 1875. But after a while its fortunes waned: in 1887 a project was started for buying the land for the public benefit as a Jubilee Memorial, but the scheme proved abortive, and in May, 1888, the Palace was again opened by a company who had obtained a seven years' lease from the London Financial Association as owners. Then the question of securing the ground as an open space was warmly espoused by Mr. H. R. Williams, Chairman of the Hornsey Local Board, and Mr. Littler, Q.C., Chairman of the Middlesex County Council. At a meeting held in the Mansion House on February 9, 1893, it was stated that the Association were willing to sell for 275,000*l.* the entire property of 420 acres and the Palace, which had cost them 320,000*l.*, and that the Palace, with its theatre, concert-room, picture galleries, lecture-rooms, great hall (having a capacity for 12,000, besides an orchestra of 2,000), circus, swimming-baths, &c., covered an area of 7½ acres. It was stated, further, that whilst 138 acres of the land could not, by statute, be built upon, the Association could sell 280 acres for building purposes, and had already so disposed of about 40 acres. At their meeting of March 14 of that year the London County Council adopted a recommendation of their Parks Committee not to contribute 120,000*l.* towards the purchase money. Of late years land in the immediate neighbourhood has been sold for building purposes at prices ranging from 1,200*l.* to 1,500*l.* per acre.

EDINBURGH ARCHITECTURAL ASSOCIATION.—At a meeting of the Edinburgh Architectural Association in the Royal Institution on the 6th inst.—Mr. Thomas Ross, the President in the chair—Bailie Pollard, convener of the Town Council's Public Health Committee, gave an address on "Fever Hospital Structure, with special reference to the new City Hospital at Colinton Mains." In our next issue a short resumé of the address will be given.

GLASGOW INSTITUTE OF ARCHITECTS.—At the usual quarterly meeting of this Institute, the President, Mr. John Jas. Burnet, A.R.S.A., reported the result of the meetings and correspondence which had taken place with the sub-committee of the Corporation regarding the district halls competitions, and the meeting approved of the action of the representatives of the Institute in the matter. Messrs. Edward A. B. Hay and Ninian MacWhannell were elected members of the Institute. It was agreed to hold an informal dinner of the members on April 15.

LIVERPOOL ARCHITECTURAL SOCIETY. — With the object of celebrating the jubilee of this Society, the President and Council have issued invitations for a banquet to be held on the 18th inst., which, by permission of the Corporation Committee controlling the Walker Gallery, will be held in one of the rooms of the Spring Exhibition.

BUILDING BY-LAWS, SALFORD.—At the Salford Town Hall on the 6th inst. Mr. Edmund Pearse Burd, an inspector of the Local Government Board, held an inquiry as to the application of the Salford Corporation for the issue of a provisional order under Section 303 of the Public Health Act, 1875, to partially repeal, alter, or amend the Local Acts in force in the borough so far as may be necessary for the purpose of enabling the Corporation to make by-laws relative to buildings and new streets under the general law. Mr. D. C. Evans, the deputy Town Clerk, represented the Corporation, and amongst those present were Mr. J. Corbett, the Borough Engineer, Mr. H. Gilbert Whyatt, deputy Borough Engineer, and others. There was no opposition to the application. Mr. Evans stated that the regulations in regard to buildings erected in the borough were contained in Local Acts, some of whose sections required amendment.

FYLDE WORKHOUSE, KIRKHAM, LANCASHIRE.—At a meeting of the Fylde Board of Guardians on the 6th inst. the Clerk read a letter from Messrs. Crickmay & Sons, architects, Westminster. It will be remembered that the first premium in respect to the new workhouse plans was awarded to this firm; but Messrs. Haywood & Harrison, of Accrington, who secured the second premium, were appointed the architects, principally on the ground that they were local men. Messrs. Crickmay & Sons argue that the decision was come to not on the ground of the superiority of the plans, and they understood that an assessor had been appointed, and that he had advised the Guardians to select theirs as the most suitable design. They were greatly surprised on finding that the committee, after careful consideration, had decided that Messrs. Haywood & Harrison should be entrusted with the work. They gathered that the Guardians thought they had adopted a proper course in appointing local men. In their opinion it would have been right, if they had decided in the first place that only local men should compete; but having thrown the competition open and issued their conditions, in their opinion they were bound by them. Further, they challenged the Guardians to forward the three sets of competition drawings to the Local Government Board to decide as to which set of designs most nearly complied with their stipulations and who should be appointed as architects, and by their decision they pledged themselves to be bound. Failing this, they gave the Guardians notice that with regret they felt compelled to consult their solicitors and take such steps as they might be advised in order to enforce their rights in the matter. The Chairman stated that as long as they were threatened with legal proceedings he proposed that they leave the matter alone. This course was adopted.

MUSEUM AND ART GALLERY, PLYMOUTH. — Major-General Crozier, C.E., Local Government Board Inspector, held an inquiry on the 6th inst. at the Guildhall into an application by Plymouth Corporation for sanction to borrow 22,306*l.* for the erection of a museum and art gallery, 550*l.* for street improvements, 2,500*l.* for public lighting, 15,800*l.* for the reconstruction of sewers and repairing of streets, and 1,340*l.* for the purchase and adaptation of premises for the purpose of a fire and police-station. The Town Clerk (Mr. J. H. Ellis) explained that the Town Council had to consider in what way they could most properly celebrate her Majesty's long reign, and they came to the conclusion that the best way was to erect some enduring and useful memorial. Subscriptions had been raised to the amount of 1,800*l.*, and the Council had adopted the Museums' Act. The institution would have a double object—to promote the scientific, archæological, and antiquarian interests associated with Plymouth and the neighbourhood, and to provide a home for historical subjects illustrative of the maritime progress of England. The art gallery would be divided into sections, one to be associated with the events of the sixteenth century, another with the period between the seventeenth century and 1837, while the third would be specially identified with the reign of Queen Victoria. The site offered in Tavistock-road was part of the ancient Corporate estate, and was centrally situated, and the Council had powers to widen the streets in the immediate neighbourhood.—Mr. H. J. Snell, architect of the museum, replying to the Inspector, said there were no detailed estimates. The quantities had not been taken out yet. The Inspector: Don't you intend to take out the quantities? Mr. Snell: Yes; when we get sanction for the loan. The Inspector: But we want proper estimates. When the inevitable excess arises on this building we want proper estimates to refer to. Mr. Snell said he had had a large experience as architect of the Devonport Technical Schools and other buildings, for which the Local Government Board had sanctioned loans, and had never been asked for quantities at an inquiry before. His estimate for the Museum and Art Gallery was 22,306*l.*—Mr. Ellis pointed out that if the loan was sanctioned the Corporation did not propose to proceed with the whole of the work at once. It would be carried out in sections, and the first section with which it was now proposed to proceed would cost 9,240*l.* In closing the inquiry, the Inspector reverted to his complaint at the commencement that plans of the Museum and Art Gallery, with estimates and quantities, had not been furnished to the Local Government Board, and remarked that he did not see why, when an architect designed a building, he should not make estimates and take out quantities. Surveyors always did so, but he supposed that architects considered themselves artists and not bound by the ordinary rules of business.

CAPITAL AND LABOUR.

BUILDING TRADE DISPUTE, DARLINGTON.—A meeting of the Darlington Master Builders' Association was held recently to consider the men's demands for an advance of wages and improved working rules. After a full consideration of the circumstances, the masters resolved to grant the advance of one penny per hour in the men's wages, whilst the alterations to the working rules, as proposed by the men, were accepted by the masters, the only alteration being that, instead of two, an additional apprentice will be allowed in one workshop, the third apprentice to be the son of a bricklayer.

LEEDS BUILDING TRADES.—The men in the Leeds building trades lately gave notice for an advance of wages. The masons, who asked for ½d. per hour advance, have had their demand granted, the request for extra overtime being withdrawn. The plasterers asked for 1d. per hour advance, and the masters have offered ½d., which has not yet been accepted. The joiners ask for ½d. per hour advance, which is still under consideration.

THE BUILDING TRADE AT WELLINGBOROUGH.—Meetings have recently been held amongst the men engaged in the building trade at Wellingborough, with the view of endeavouring to obtain an advance of wages, which they consider they are entitled to, as the rate in that town at present is below that paid at Kettering and other places. The bricklayers, who were the first to move in the matter, asked for a penny advance from 7d. to 8d., and it is stated that the employers will be ready to yield a halfpenny. The carpenters and joiners have decided to follow the lead of the bricklayers by asking for another penny upon their present wage of 7d.

STRIKE OF HULL PAINTERS.—On the 4th inst. the Hull painters, to the number of about 240, came out on strike, owing to the refusal of the employers to concede an advance in wages. Some time ago the men, through their society, sent in an application for an advance of one halfpenny per hour upon their present rate of 7½d. This the employers refused.

STRIKE OF BRICKLAYERS, STROUD.—A strike of bricklayers in Stroud and district has taken place upon the refusal of the employers to sign a code of working rules, and, in consequence, the position of builders' labourers is also affected. In all about forty bricklayers have ceased work, and their action has thrown out of employment about twenty labourers. The Labourers' Union, acting through Mr. H. Brabham, of Bristol, has considered the situation, and the men have instructed Mr. Brabham to interview the employers with a view to their signatures to a code of rules for labourers and a wage of 4½d. per hour.

SCARBOROUGH PLUMBERS.—When the plumbers of Scarborough struck last April for an advance of wages from 7½d. to 8½d. per hour work was resumed at 8d., on condition that if as many operative plumbers be working in the town on April 3, 1898, as there were at the time of the strike the wages be advanced to 8½d. The time having elapsed, a

meeting of the Master Builders and Plumbers' Association, together with the Scarborough Trades Council, has been held, at which it was reported that fewer plumbers are now engaged in the town than in April of last year. It was resolved, therefore, that, in accordance with the previous resolution, the wages remain at 8d.

LEGAL.

LUMLEY AND ANOTHER *V.* RAINBOW DYE WORKS COMPANY, LIMITED.

In this case the plaintiffs were Messrs. Edward Lumley and F. H. Cridland, the trustees under a deed of assignment of the estate of Harry Davis, of Boscombe, Bournemouth, contractor, and the defendants were the Rainbow Dye Works Co., Lim., of Bournemouth and Weymouth.

The action was originally brought in the High Court of Justice, and the plaintiffs sought to recover the sum of 89*l.* 9s. as the balance due from the defendants to Davis in respect of a contract which the latter had entered into for the erection of additions to defendants' works at Boscombe. The defendants made a counter claim of 40*l.* for penalties, and at their instance the action was referred to the arbitration of Mr. G. A. Bligh Livesay, A.R.I.B.A., of Boscombe. The hearing took place on March 9 and 10 at the arbitrator's offices, the plaintiffs being represented by Mr. W. D'Angibau, solicitor, of Boscombe, and the defendants by Mr. Symes, of Weymouth, and evidence was adduced by both sides. The arbitrator in his award found for the plaintiffs for the full amount claimed, and also on the counter claim, together with the costs of the arbitration, but directed that the plaintiffs shall pay the defendants' costs in connexion with the order for reference.

IMPORTANT CASE UNDER THE LONDON BUILDING ACT, 1894.

The case of Woodham *v.* The London County Council came before a Divisional Court of Queen's Bench, composed of Mr. Justice Day and Mr. Justice Darling, on the 6th inst., on the appeal of the plaintiff from the decision of the Tribunal of Appeal in a matter arising under the London Building Act, 1894. The appeal came before the Court in the form of a special case, which stated that the appellant, Henry Woodham, was the owner of a certain plot of land in the parish of Lewisham, adjoining the public carriage roads known as Laleham-road and Brownhill-road, and in April, 1897, he applied to the respondents in pursuance of the provisions of the London Building Act, 1894, for their sanction to the construction through the land of a new street. The respondents refused the application.

On July 8, 1897, the appellant made a fresh application to the respondents, and on August 6 following the respondents passed a resolution directing an order to be sealed refusing their sanction to the formation or laying out of the proposed street or streets, on the ground that the new street or streets would not at and from the time of forming and laying out afford direct communication between two streets formed and laid out for carriage traffic, and that the respondents had not been satisfied by the appellant that he had control over the portion of the Catford cycle track ground to be absorbed and upon which part of the new street was proposed to be formed. The appellant then appealed from this decision of the respondents to the Tribunal of Appeal on the following grounds:—1. That the proposed new street would at and from the time of forming and laying out the same afford direct communication between two streets formed and laid out for carriage traffic, to wit, Laleham-road and Brownhill-road. 2. That the respondents were not entitled to refuse their sanction on the ground that they had not been satisfied by the appellant that he had control over the ground upon which part of the new street was proposed to be formed. 3. That the appellant had control over the ground upon which the whole of the new street was proposed to be formed, and intended and was able to form the same in accordance with such proposal. Before the Tribunal of Appeal the appellant contended that the proposed new street or streets would at and from the time of forming and laying out the same afford communication between two streets formed and laid out for carriage traffic, namely, Laleham-road and Brownhill-road, and that such communication would not be indirect, but would be direct within the meaning of Section 9, sub-Section (4) of the London Building Act, 1894. He also contended that each of the two straight portions of the proposed new street or streets would at and from the time of forming afford direct communication between two streets formed and laid out for carriage traffic within the meaning of the sub-Section, inasmuch as each of such straight portions would, when completed, afford direct communication between the other of such straight portions and Laleham-road or Brownhill-road, as the case might be. The respondents did not rely upon the alleged failure of the appellant to satisfy them that he had control over the ground on which it was proposed to form the new street or streets, but they contended that the streets would not afford direct communication between Laleham-road and Brownhill-road within the meaning of the sub-section, because such new street or streets would not afford communication in a straight line between those roads. They further contended that the communication was not in point of fact reasonably direct, and that neither of the straight portions of the proposed new street or streets would afford communication between two streets laid out and formed for carriage traffic, because the other of such portions was not an existing street. The Tribunal of Appeal decided that the proposed new street or streets would not afford direct communication between Laleham-road and Brownhill-road, and that the straight portions of the proposed street or streets could not be treated as streets laid out and formed for carriage traffic for the purposes of sec. 9, sub-sec. 4, because they were not existing streets, and dismissed the appeal accordingly.

Mr. R. M. Bray, Q.C., and Mr. Alexander Glen appeared for the appellant; and Mr. Horace Avory and Mr. Daldy for the respondents.

Mr. Bray in opening the case, stated that his client's land was bounded by the Laleham-road, which was a public street, and on the bottom side by the Brownhill-road, also a public street, and the new street the appellant proposed was at right angles to that. The contention of the County Council was that the street must be straight. If this contention were correct it would be illegal hereafter to build crescents or anything but perfectly straight streets. The County Council objected to both of the plans submitted to them, and said there must be no bends or angles in the street, and that the word "direct" in the section meant straight. The learned counsel said that the words "in a straight line" were not in the section, and contended that the word "direct" did not bear the interpretation put upon it by the County Council.

Mr. Avory, on behalf of the respondents, said that the contention which his learned friend had mentioned as to the words "direct communication," meaning in a straight line, was only one of the contentions put before the Tribunal of Appeal on behalf of the County Council. The second contention, which was the more material one, was that the communication to be afforded by the proposed new street or streets was not in point of fact reasonably direct. He submitted to their lordships that that was essentially a question of fact, and if they were to lay it down as a matter of law that a street in the form proposed did afford "direct communication," their lordships would have brought into Court every application for the formation of a new street, and asked to decide whether this or that street was in "direct communication" within the meaning of the Act. The section of the Act provided that the new street must afford direct communication between two streets, and the primary meaning of the word "direct" was straight, but he was quite content to adopt the contention that it meant reasonably direct as a matter of fact. Their Lordships would be asked next to say whether a street, like a flash of fork lightning, afforded "direct communication." If it were proper to have one angle in a street, why not two or twenty?

Mr. Justice Phillimore: How do you deal with the crescent point?

Mr. Avory replied that the County Council might or might not object to it. The Act said that a person who wanted to form or lay out a new street must apply to the County Council for their sanction. By Section 9 a certain number of cases were enumerated which would justify the County Council in refusing their sanction. They might therefore give their sanction or they might not. There was, however, this further provision, that if the Council refused their sanction in any particular case, the applicant might appeal from the decision to the Tribunal of Appeal which was constituted to decide questions of fact like the present. It was a tribunal formed of practical men—surveyors and architects.

Mr. Justice Day: And men of taste?

Mr. Avory: Presumably men of taste. Your Lordship means as distinct from the London County Council. Continuing, the learned counsel said that in the present case the Tribunal of Appeal came to the conclusion in fact that the formation of the proposed new street did not afford direct communication between two streets, no doubt having in their minds that if they allowed one angle they must allow two, and if two why not three or more. How could it be said that a street going in a zig-zag fashion was in "direct communication"? It was not necessary for him to argue in the present case that the word "direct" meant a mathematical straight line. In all those cases the Council in the first instance and the Tribunal of Appeal in the second had before them the facts of each particular case, and they could, of course, allow a certain elasticity to the expression "direct communication," according to the facts of each particular case. In the present case, upon the facts, both the Council and the Tribunal of Appeal decided that the proposed new street did not afford "direct communicaton." He submitted that that was essentially a question of fact and that their Lordships should not lay down what was "direct communication," but should leave that to be determined by the Tribunal to whom Parliament had left those matters to be decided.

Mr. Bray, in reply, said that Parliament had laid it down that the County Council was not to be overbearing.

Mr. Justice Phillimore: The County Council has to be satisfied that their objection is well founded in fact, but not well founded in law.

Mr. Bray said their Lordships were asked to say what was the meaning of the word "direct," and if it meant "straight." If the County Council were to be at liberty to refuse to sanction any new street which was not straight the Act of Parliament would have so specified.

Mr. Justice Day, in giving judgment, said he was clearly of opinion that this was a question of fact on which both the County Council and the Tribunal of Appeal had expressed an opinion, and he did not see any reason to differ from them. He expressed no other opinion about the case.

Mr. Justice Phillimore said he was of the same opinion. In many ways he would have been glad to have acceded to the argument of Mr. Bray, but he was of opinion that the Court could not interfere with the finding of the Tribunal of Appeal in the present case. It seemed to be a pure question of fact and not of law.

The appeal was accordingly dismissed with costs.

MEETINGS.

Friday, April 15.

Institution of Civil Engineers.—Students' visit to the Grand Junction Waterworks, Hampton. 2.30 p.m.

Monday, April 18.

Royal Institute of British Architects.—(1) Special General Meeting (Business) to confirm the resolution passed at the Special General Meeting held on the 4th inst., suspending By-law 26; (2) Ordinary General Meeting, when Mr. A. N. Paterson will read a paper, entitled "A Study of Domestic Architecture in the Eastern States of America in the year 1896, with special reference to questions of Plan, Construction, Heating, Drainage, &c." 8 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Dr. G. Reid on "Sanitary Appliances." 8 p.m.

Society of Arts (Cantor Lectures).—Dr. D. Morris on "Sources of Commercial India-rubber." I. 8 p.m.

Liverpool Architectural Society.—Jubilee Banquet.

Tuesday, April 19.

Institution of Civil Engineers.—Paper to be discussed: "The Electricity Supply of London," by Mr. A. H. Preece. 8 p.m.

Royal Institution.—Mr. T. C. Gotch on "Phases of Art; Past and Present." I. 3 p.m.

Wednesday, April 20.

Surveyors' Institution (Visit to Manchester).—Meeting to be held in the Mayor's Parlour, Town Hall, at 10.45 a.m., when the following papers will be read:—(1) "Manchester, from 1847 to 1897," by Mr. John Holden; (2) "Lessons from Fire and Panic," by Mr. T. Blashill; (3) "A Consideration of some of the Present-day Difficulties met with in a Land Agent's Practice," by Mr. C. P. Hall; and (4) "Notes on the Construction of Town Buildings," by Mr. Howard Chatfeild Clarke. Dinner at the Grand Hotel at 6.30 p.m.

Society of Arts.—Mr. E. O. Sachs on "Stage Mechanism." 8 p.m.

Sanitary Institute (Demonstrations for Sanitary Officers).—Inspection of disinfecting apparatus and model steam laundry at St. John's Wharf, Fulham. 3.30 p.m.

Builders' Foremen and Clerks of Works' Institution.—Quarterly meeting of the members. 8 p.m.

Edinburgh Architectural Society.—Mr. T. Duncan Rhind on "Sculpture in Relation to Architecture." 8 p.m.

British Archæological Association.—Mr. G. G. Irvine on "The Church and Well of S. Doulough, Co. Dublin." 8 p.m.

Thursday, April 21.

Surveyors' Institution (Visit to Manchester).—Concluded.

Sanitary Institute (Lectures for Sanitary Officers).—Mr. J. Wright Clarke on "Details of Plumbers' Work." 8 p.m.

Society for the Encouragement of the Fine Arts.—Second Conversazione, at the Galleries of the Royal Society of British Artists, Suffolk-street, Pall Mall.

Institution of Electrical Engineers.—Continuation of discussion on Mr. R. Hammond's paper on "Cost of Generation and Distribution of Electrical Energy." 8 p.m.

Society of Arts (Indian Section).—Mr. Horace Bell on "Recent Railway Policy in India." 4.30 p.m.

Friday, April 22.

Architectural Association.—Mr. H. B. Creswell on "The Morality and Economy of Competitions." 7.30.

Royal Institution.—Mr. W. H. M. Christie, M.A., on "The Recent Eclipse." 9 p.m.

Institution of Civil Engineers (Students' Meeting).—Mr. M. W. Henty on the "New Cut Swing-Bridge, Swansea." 8 p.m.

Saturday, April 23.

Sanitary Institute (Demonstrations for Sanitary Officers).—Inspection at Beddington Sewage Farm, Croydon.

Edinburgh Architectural Association.—Visit to St. Mary's Cathedral, Chapter House, Singing School, and Miss Coates' House.

RECENT PATENTS:

ABSTRACTS OF ACCEPTED SPECIFICATIONS.

Open to opposition until May 23.

[1897] 6,898.—Miners' Safety Lamps: *J. Ashworth.*—The inlet and outlet openings are at one side of the circumference of the lamp and air tube; a regulating shaft screw or pinion lifts or regulates the wicks and keeps all of them at one height; the air ring and glass supporting ring have a cylindrical continuation extending down to within a short distance from the top of the oil vessel; for the detection of fire-damp or other explosive gas, a strip of wire of platinum paladium or platinised asbestos is placed within the lamp's interior, where it can be heated in the flame; the lock to secure the oil vessel to the frame has a

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
*Cast-Iron Sewer Ventilating Columns, &c.	Beckenham U.D.C.	J. A. Angell, Council Offices	April 18
*Road Making and Paving	Willesden D.C.	O. C. Robson, Offices, Dyne-road, Kilburn	April 19
*Painting, Distempering, &c. at Infirmary	Whitechapel Guardians	The Steward, Infirmary, Vallance-rd Whitechapel	do.
Providing and Laying Cast Iron Pipes	Mansfield Woodhouse U.D.C.	G. & F. W. Hodson, Engr. Loughborough	do.
Twenty-two Houses, New Tredegar, Mon.	New Tredegar Building Club	G. Kenshole, Archt. Elliot Offices, New Tredegar	do.
Water Mains, Berrow Burnham, Somt.	Berrow Water Co. Ltd	W. J. Press, Engr. Town Hall, Burnham	do.
Additions to California School	Ipswich Sch. Bd.	T. W. Cotman, Archt Northgate-st. Ipswich	do.
Three Houses, &c. Eversley-place, Halifax		Medley Hall, Archt. 29, Northgate, Halifax	April 20
Additions to Boiler House, &c.	Ulverston Union	J. W. Grundy & Son, Archt. Ulverston	do.
Overflow Chambers, &c. Sussex-street and others, Broughton	Salford Corp.	S. Brown, Town Hall	do.
Corn Works, Sea View-road, Liscard, Cheshire	Wallasey U.D.C.	J. H. Crowther, Engr. Great Float, near Birkenhead	April 21
Settling Tanks, &c.	Ilford U.D.C.	Taylor, Sons, & Crimp, 27, Gt. George-street, S.W.	do
Broken Granite	Ashford (Kent) U.D.C.	W. Terrill, Town Surveyor, North-street	do.
Granite Road Metal	Lichfield R.D.C.	E. J. Knapman, Surveyor, London-rd, Lichfield	do.
Retaining Wall, Gibbon-street, Holt Town	Manchester Corp.	City Surveyor, Town Hall	do.
*Alterations and Repairs to Home, Tooting	Wandsworth and Clapham Union	Mr. Gale, at Hill House, Church-lane, Tooting	do.
Two Shops and Houses, Woodside, Halifax		Medley Hall Archt. 29, Northgate, Halifax	April 22
Boundary Walls, &c, at Church, Donaghmore, Ireland		E. J. Toye, Archt. Strand, Londonderry	do.
*Fire and Police Station	Sheffield Corp.	J. Norton, Archt. George-street, Sheffield	do.
*Laying 3¼ miles 12-in. Pipes	Newmarket Waterworks Co. Ltd.	J. B. Everard, 6, Millstone-lane, Leicester	April 23
Kerbs, Setts, Macadam, &c.	Hoylake (Cheshire) & West Kirby U.D.C.	T. Foster, Surv. Council's Offices, Hoylake	do.
Road Metal	Stratford-on-Avon T.C.	R. Dixon, C.E. Municipal Offices	do.
Two Cottages, Harmby		H. Storey, Harmby, Bedale	do.
*Main Drainage Works	Waterford Corp.	M. J. Fleming, Town Hall	April 25
*New Sewers, Sewer Pipes, &c.	do.	do.	do
*Granite Kerb and Setts, Tarpaving, and Repairs to Tarpaving	Woodford U.D.C.	Surveyor, Council Offices, Woodford Green	do.
*School Buildings, Cottage, &c.	Ilford Sch. Bd.	C.J. Dawson, 7, Bank-bldgs High-st. Ilford	do.
Road Works	Sutherland C.C.	Mr. Baxter, Road Surv. Clynemilton, Sutherlandshire	do.
*Institute Buildings	St. George's Institute, Salop	T. H. Fleeming, 102, Darlington-street, Wolverhampton	do.
*Works and Materials	Southgate U.D.C.	C. G. Lawson, Council Offices, Palmer's Green, N.	April 26
*Ten Slop Carts	County Borough of West Ham	Lewis Angell, Town Hall, Stratford, E.	do.
*Making-up and Paving Streets	do.	do.	do.
*Pitching, Channelling, and Kerbing roads	do.	do.	do.
Dredging Work between Maidenhead and Windsor	Thames Conservators	Engr. Thames Conservancy Offices, Victoria Embankment, W.C.	do.
Extension of Pumping Station, Machinery, &c.	Petworth R.D.C.	Fairbank & Son, C.E. 13, Lendal, York	do.
*Road Works	Tottenham U.D.C.	P. E. Murphy, 712, High-st. Tottenham	do.
	do.	do.	do.
*Cast Iron Pipe Water Main	Standing Joint Committee	J. Somes Story, County Offices, St. Mary's Gate, Derby	April 27
Lock-up, Norton Woodseats, near Sheffield		W. E. Lawson, Stranorlar, co. Donegal	do.
Railway Extension, Strabane to Londonderry	Donegal Ry. Co.	W. H. Radford, C.E. Angel-row, Nottingham	do.
Sewers and Sewage Disposal Works	Stapleford (Notts.) R.D.C.	do.	do.
Cast Iron Sewer Pipes, &c.	do.	E. Thomas & Son, 7, Queen Anne's-gate, S.W.	do.
*Infirmary	Derby Union		

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
*Refuse Destructor Buildings, Roadways, Engine House, &c.	Rotherhithe Vestry	Norman Scorgie, Town Hall, Lower-road, S.E.	April 28
Roadmaking, &c. at Workhouse, Marloes-road	Kensington Union	J. H. Rutherglen, Guardians' Offices	do.
Agricultural School, Edgmond, Newport, Salop	Governors, Harper Adam's Foundation	H. Teather, Archt. Queen-street, Cardiff	do.
*Filter Sand and Pea Gravel	Cuckfield R.D.C.	J. Mansergh, 5, Victoria-street, S.W.	do.
*4,000 yards Concrete Flags	Walthamstow U.D.C.	G. W. Rolmes, Town Hall, Walthamstow	April 29
*Steel Bridge (Three Spans of 58ft. each)	Sheffield Corp.	C. F. Wike, Town Hall	April 30
*School Building	Wednesfield S.B.	F. Hunter, Lines Lich Gates, Queen-square, Wolverhampton	May 2
*Isolation Hospital	Parc Gwyllt Asylum, Bridgend	Giles, Gough, & Trollope, 28, Craven-street, Charing Cross	May 4
*Making-up Road	Wanstead U.D.C.	Surveyor, Council Offices	May 6
*Supply of Plant and Installing Electric Light at Workhouse	Bethnal Green Gdns.	Giles, Gough, & Trollope, 28, Craven-street, Strand, W.C.	May 17
Refuse Destructor Plant, &c. Foss Islands	York Corp.	A. Creer, City Engr. Guildhall, York	No date
House, off Westbank-terrace, Gargrave-road, Skipton		J. Hartley, Archt. Skipton	do.
Grand Stand, Sligo, Ireland		W. Gilcriest, C.E. Sligo	do.
Farmhouse, &c, Thornton, near Bradford		Cowgill & Son, 19, Tanfield-chambers, Bradford	do.
Drainage Works, Bottisham	Newmarket R.D.C.	S. J. Ennion, Devonshire, Newmarket	do.
Semi-detached Villas, Foxhall-road, Nottingham		F. H. Collyer, Archt South Parade Nottingham	do.
Sewers and Roadways, Gallows' Close, Northampton	Northampton Building Soc.	M. H. Holding, Archt, Corn Exchange, Northampton	do.
Club Buildings, Allen-road, Finedon		Mosley & Anderson, Archts. Northampton	do.
Villa, Woodlands, Kendal	J. Smith	J. Hutton, Archt. Kendal	do.
Additions, &c. to Bridge Inn, Llanbadoc, near Usk, Mon.	Phillips & Sons, Ltd.	Swalwell & Creighton, Archts. Dock-st Newport, Mon.	do.
Alterations to Bridge Inn, Yorks.		A. D. Kaye, Archt. 71, Albion-street, Leeds	do.
Five New Roads, off Eccleshall-road, Sheffield		Smith, Denton, & Co., Montgomery-chambers, Hartshead, Sheffield	do.
Church Institute, New Cleethorpes		C. Hodgson Fowler, Archt. The College, Durham	do.
Two Houses, Blaina, Mon.	W. Williams	Wm. Williams, Feraleo House, Blaina	do.
Two Houses, Victoria Park Estate, Bramley, near Leeds		H. Swanwick, Archt. 101, Burley Lodge-road, Leeds	do.
Farmhouse, &c. Brignall, nr. Barnard Castle		J. F. B. Baker, Rokeby-grove, Barnard Castle	do.
Walls, Gates, &c. at Cemetery	Brompton-on-Swale Parish Council	F. W. Dodds, The Nurseries, Catterick Bridge, Brompton-on-Swale	do.
Bank and House, Craigellachie, Aberdeenshire, N.B.	Town and County Bank	Dunn & Findlay, Archts. 35, Frederick-street, Edinburgh	do.
Four Houses, Palatine-street, Denton, Lancs.	J. Stanley	J. Stanley, 26, Market-street, Denton	do.
*Painting, &c. &c. at Barracks, Preston and Seaforth	War Department	R.E. Office, Rupert-lane, Barracks, Liverpool	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in.
*Surveyor and Inspector of Nuisances	Hayward's Heath U.D.C.	110*l.* per annum, combined	April 26
*Assistant Surveyor	Paddington Vestry	300*l* rising to 500*l* per annum	May 2
*Inspector of Nuisances, Sanitary, Water, and Canal Boats, &c. Inspector	Stroud U.D.C.	180*l.* per annum combined	May 4

Those marked with an asterisk (*) are advertised in this Number. Competitions, p. — Contracts, pp. iv. vi. & viii. *Public Appointments, pp.* xvi. xvii. & xix.

sliding bolt or pin, fitted in a bracket on the side of the former, and formed with a head and hole through it, whereby it is locked by means of a lead rivet or other seal to the bracket; for burning benzoline or other spirit the burner is bevelled at its top with a conical outlet and a slide for altering the length or height of the burner.

8,761.—A WINDOW CLEANER: *Maria A. S. Gray.*—To avoid the necessity for the operator to go outside is contrived a telescopic handle of hard wood, flat in shape, and having at its end a triangular spade to be covered with a glove or pouch of any stout material, and having a surface of wash leather.

9,272.—FORMING GROOVES IN WOOD AND OTHER MATERIALS: *G. H. Young.*—The invention relates more particularly to making grooves which are circular in cross section, and have the "mouth" less wide than the groove's diameter; the tool's cutting part has an outline similar to that of the groove's cross section, with a convex back and a hollow, grooved, or fluted front, the flute's axis being either in the same plane with the axis of the tool's stem, or at an angle thereto; the lower part of the spoon-shaped cutting portion communicates with a spiral groove for facilitating the escape of the removed material.

9,337.—A COMBINED GUARD AND GUIDE FOR CIRCULAR-SAW BENCHES AND THE LIKE TOOLS: *E. Williams.*—The guard is constructed with a hood covering the saw-teeth at front and on top, and is pivoted to a radial arm whose one end is supported upon a screw set in an inclined position, whereby the turning of the screw raises the hood and draws it forward, or *vice versâ*; there is also a sliding extension for the front edge of the hood, with one or more rollers to press against the timber as it travels forward to the saw.

9,357.—WINDOW SASHES OR FRAMES: *W. Jackson.*—The vertical sliding portions of the sash are made to about half the thickness of the horizontal cross bars; to the vertical portion of each sash is pivoted (at or about its centre) a frame in which the panes are fixed; on each side of the sash is provided a spring hook or sneck catch of mortise type, for locking the frames, when closed, in position; the cord stiles or runners slide in races of the frame.

9,695.—MOVABLE PARTITIONS OR SCREENS FOR SCHOOL OR OTHER ROOMS OR HALLS: *W. Johnson.*—In lieu of the revolving shutters or screens hitherto used, the inventor has devised a series of sections or frames (with, say, wood panels below and glass panels above) which, when placed edge to edge, will stretch across the room or hall. The frames have rollers, which roll on a stationary rail; they are suspended from the rail, and, by means of a swivel or pivot, can be made to travel round a curve; the frames have pins or rollers engaging in slots or grooves in the floor.

11,427.—MITRE CRAMPS: *T. Hughes.*—The improvement lies in the adoption of a fixed central revolving screw rotating a pair of serrated wheels and a pair of toothed pinions engaging in a rack; on the screw being revolved the serrated wheels advance towards the frame or mouldings, and on coming into contact force the same tightly together, making a perfect joint instead of one opening at the inner angle. Ths cramp rests upon three feet on the bench: the two front feet are hinged in fixed brackets, in which they can be turned to any angle between the horizontal and vertical positions, and secured by a winged jam screw when required.

11,833.—WINDOW SASH FASTENERS: *J. Wood.*—For avoiding the thrusting back of a pivoted lever from outside the window, a recess in the engaging plate is provided with a spring carrying a tooth, whereof one face is inclined to let the lever ride past and press back the tooth when it enters the catch; the tooth then moves behind the cover and locks the latter; a stud or projection presses back the spring when the fastener is to be undone, and a shield on the fastener protects the stud from being tampered with by an instrument from without.

18,779.—MANUFACTURE OF CEMENT: *Holden & Major (Directors of the Bridgwater Portland Cement Co.).*—In order to dispense with the drying of the "slurry" before it is burned, the kiln has passages so arranged that they shall carry off the superfluous moisture from the cement, which is laid in layers alternately with the fuel; the passages are formed of perforated tubes or hollow pieces built up upon one another.

20,606.—WALL PLUGS: *C. Udall and F. H. Royce & Co.*—The plug, of cast malleable iron or other suitable material, has in its thick end, or head, a threaded hole for an ordinary screw. When the plug is driven home, a screw is passed through a hole in the casing to be fixed, and is screwed into the plug.

30,905.—SUPPLY COCKS FOR WATER METERS, HYDRAULIC LIFTS, AND ANALOGOUS USES: *H. T. E. Kirkpatrick.*—The cock, free in its seating and without pivot, has a grooved packing of indiarubber or other soft material, retained in place by the pressure of a projection, the arrangement being such that the shifting of the cock, under pressure of the water, towards the smaller end of its conical setting, shall be limited by resistance to compression offered by the packing in such manner that rotation of the latter may take place without injurious displacement in the direction of the axis and without appreciable friction of the packing, which needs neither lubrication nor adjustment.

[1898] 1,932.—SANITARY PIPE TRAPS: *A. T. Chorley.*—The syphon chamber, provided with a suitable base, receives the tongue or triangularly shaped division made in the sanitary trap; above the tongue or division is a recess which receives a stopper, and facing the recess is a similar chamber in which is inserted another stopper—both of these being cemented or sealed in the trap.

2,400.—GLUE: *R. Brauer.*—The invention relates to the manufacture of glue in the form of a powder, thus admitting of division into distinct portions, either by weight or measure, and of readier solubility; the broth of glue is filled into flat casings or moulds placed in a drying stove or frame, which during the whole process of drying is kept under vacuum. After five or six hours' drying it will be found that the glue has a highly porous structure, and can be disintegrated by a stamper, mill, beaters, or rollers into powder.

3,658.—WATER-CLOSETS: *H. F. Passavant.*—The device, applicable to old and new closets alike, consists of a ball fitted on the flush pipe, which communicates with the ball's interior by an upper larger hole, and a lower smaller

hole, so as to provide a water chamber to be quickly filled with water through the medium of a tongue in the pipe when the pan is flushed, its contents slowly escaping through the lower hole into the pan, so that there is always water in the pan when the closet is used.

NEW APPLICATIONS.

For week ending April 2.

7,401, J. G. Liedhardt, a Self-raising Shelf for Furniture and Joinery. 7,406, W. H. Barker, for Attaching "Shakers" used for Screening Gravel, Sand, Coal, &c. 7,408, W. Holmes, an Electricity Meter. 7,412, P. Parsons, Fuel Combustion and Smoke Prevention. 7,418, H. Miller, Treatment of Levigated Slate. 7,422, G. L. Burnett, Window Fastenings. 7,429, G. Hamalian, Blind Slat Operating and Locking Devices. 7,434, W. Murphy, Swivel Toolholders. 7,437, Fidler & Ayres, Glaziers' Diamonds, &c. 7,445, Seeley & Godden, Thresholds. 7,450, H. Daniel, Electric Current Delivery for Street Railways. 7,458, E. Jones, Chucks for Lathes and other Machine Tools. 7,463, W. Froggatt, Hot Water or Steam Heating Radiators. 7,477, T. Beaman, Locks. 7,482, W. H. Sisson, Gas and Oil Engines. 7,484, Tonks & Revill, Butt Hinges. 7,487, Minton-Senhouse & Emery, Electric Batteries. 7,497, W. Mavitta, Folding Joints of Measuring Rules and the like. 7,498, J. Heales, Window Cleaning Appliances. 7,501, Jacquette & Aubertin, Improvements in Steps, Easels, and other articles having Hinged Legs or Supports. 7,503-4, Cox & McTaggart, Breaking or Crushing Clinkers from Refuse Destructors and the like. 7,516, Watsons, Feed Water Regulating Systems. 7,519, Nordquists, and 7,693, Smith & Booth, Door-closing. 7,520, A. W. Dolfini, Mouth and Nose Guard for Use of Firemen, Miners, and others. 7,537, T. E. Caddy, Stoves for Heating Irons. 7,539, J. H. McDonald, a Keyless Tube Crane or Cock for Sinks. 7,542, W. W. Watts, a Combination Tool. 7,546, The Pacific Dredging and Reclamation Company, Dredging Apparatus. 7,547, W. Ellis, Ventilating Sash Fastener. 7,551, H. M. Stevenson, Lifting Jacks. 7,560, J. Campbell, Buckets or Grabs for Excavators. 7,566, W. L. Bliss, Electrical Distribution. 7,578, Mills & Campbell, Apparatus or Appliances for Use in Place of Rope in Lashing Scaffolding, Poles, Ledgers, &c. 7,581, G. T. Oliver, Wall-paper, &c. 7,583, Jacobys, Electrical Switches. 7,603, H. M. Kettelwell, Fire Extinction in Breweries, Distilleries, and Similar Premises. 7,609, Ramsbottom & Rofe, Street Lighting by Acetylene. 7,619, J. Day, Water-Closets. 7,630, J. C. Sellars, Modelling Compounds. 7,634, Brookes, Artificial Stone. 7,637, G. F. Restall, Clearing, Cleaning, Lining and Painting Drain and other Pipes. 7,644, C. J. Keane, Sash Fasteners. 7,648, W. Nisbet, Brush Heads and Holders. 7,670, Cockburn & Hay, Brickmaking, &c. 7,677, F. L. Konrad, Preserving and Fire-proofing Wood and the like. 7,678, L. Hatschek, Water-proof Material for Roofing and Insulating Purposes. 7,686, E. W. T. Richmond, Gas Meters. 7,707, E. B. Jackson and Others, Cleansing Lavatory, Sink, and Similar Waste Pipes. 7,708, J. McLaren, Measuring-Rules. 7,730, O. Demke, Locking Safety Chain for Doors. 7,734, T. Hawkins, Mills for Treating Clay and Similar Materials. 7,751, La Société Guyenet et de Mocomblé, Electrical Lifts worked with Hydraulic Brakes. 7,785, J. Walker, Differential Mechanism for Lathes, Auto-cars, and other Machines. 7,802, D. Weir, Opening and Closing Skylight Sashes. 7,803, S. S. Hazeland, Chimney Pots. 7,807, J. N. M. C. M. Briscoe, Air Pumps. 7,812, Harrisons, Domestic Fire-places. 7,820, T. Briggs and Others, for Preventing the Accumulation of Soot in Flues and Shafts. 7,834, A. Brainard, Hinge-making Machines. 7,837, F. W. Few, Taps, Cocks, &c. 7,842, T. Kirkland, Heating and Cooling Apparatus for Hospitals and other Buildings. 7,848, Penrose Mallison & Co., an Insulating Composition or Paint. 7,874, F. J. Murray, Tile Roofing, &c., Cutting Machine. 7,876, Underwood & Herd, an Adjustable Mitre Cramp. 7,877, Bailey & Cox, White Lead and Oxide of Lead. 7,888, H. H. Robinson, Jointing of Sanitary Pipes, &c. 7,889, E. Francis, a Fraction Area and Geometry Apparatus. 7,924, C. H. Mounsey, Flat Rules, Set Squares, and the like. 7,944, C. B. Suits, and 7,955, V. E. Prétot, Motors. 7,945, Wolfers & Hannemann, Artificial Asphalte.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

March 28.—By H. SPENCER & SONS (at Retford).

Clarborough, Notts.—A freehold farm, area 45 a. 1 r. 18 p. £1,357

March 29.—By J. F. STONEHEWER (at Blackheath).

Blackheath.—1 to 7, Parade Stables (Blackheath Pantechnicon) u.t. 62 yrs., g.r. 10*l.*, r. 138*l.* .. 1,000

March 31.—By WEATHERALL & GREEN.

Whitechapel.—Colchester-st., "Horse and Groom" p.h., f.g.r. 50*l.*, reversion in 29 yrs. 2,300

Commercial-rd., f.g.r. 40*l.*, reversion in 24 yrs... 1,620

Buckle-st., f.g.r. 36*l.*, reversion in 74 yrs. 1,055

Buckle-st., f.g.r. 44*l.*, reversion in 67 yrs. 1,340

25 and 26, Buckle-st., area 1,430 ft., f. 950

Buckle-st., f.g.r. 10*l.*, reversion in ¾ of a yr. 825

Buckle-st., &c., f.g.r. 40*l.*, reversion in 46½ yrs. 1,325

Plough-st., &c., f.g.r. 15*l.*, reversion in 66½ yrs. 420

Buckle-st., &c. (Jews' School), f.g.r. 145*l.*, reversion in 89 yrs. 4,000

Colchester-st., &c. ("Man in the Moon" p.h.), f.g.r. 100*l.*, reversion in 71 yrs. 2,650

Plough-st.-bldgs., f.g.r. 74*l.* 10s., reversion in 61 yrs. 2,075

By WILKINSON, SON, & WELCH (at Brighton).

Hove, Sussex.—7, Eaton-gardens, f. 3,800

By WYATT & SON (at Chichester).

Chichester, Sussex.—66 and 68, East-st., f., r. 92*l.* 10s. 1,550

By E. P. NEWMAN (at Uxbridge).

Harmondsworth, Middlesex.—"Bluff's Field," 7 a. 3 r. 25 p., f., r. 17*l.* 400

Whittington's Farm, 23 a. 0 r. 7 p., f., r. 120*l.*..... 3,000

Market garden land, 7 a. 0 r. 25 p., f., r. 30*l.* 950

"Blount's Farm," 24 a. 1 r. 2 p., f., r. 73*l.* 2,675

"Common" and "Parrott's" Fields, 32 a. 1 r. 6 p., f., r. 106*l.* 12s. 6d. 2,400

"Cain's Farm," 51 a. 3 r. 22 p., f., r. 150*l.* 4,300

"Lord's Field," fruit plantation, 57 a. 0 r. 36 p., f., r. 206*l.* 10s. 5,000

By F. W. GOODEVE (at Birmingham).

King's Heath, Worcs.—35 to 51 (odd), Silver-st., f., r. 117*l.* 2,190

21, Silver-st., area 2,580 yards, f. £1,320

West Bromwich, Staffs.—85 to 95 (odd). Beeches-rd., u.t. 93 yrs., g.r. 25*l.* 4s., r. 108*l.* 1,450

By FULLER, MOON, & FULLER (at Croydon).

Croydon.—82 to 92 (even). Waddon-rd., f. 1,735

3, Waddon-rd., f. 760

2, 4, 6, & 8, Waddon Marsh-lane, f., r. 100*l.* 4s. 1,185

15 and 17, Drummond-rd., f. 555

Crown Hill, "Priddy's Yard," f. 300

22, Whitehorse-rd., f., r. 40*l.* 575

53, 55, and 57, The Crescent, u.t. 91 yrs., g.r. 15*l.*, r. 115*l.* 1,015

93, 100, 102, and 104, Gloucester-rd., and a plot of land, u.t. 70 yrs., g.r. 35*l.* 265

8 to 19, Warren-rd., u.t. 97½ yrs., g.r. 36*l.* 1,680

3, Dingwell-av., u.t. 88 yrs., g.r. 12*l.*, r. 50*l.*.... 520

2 to 10 (even), Howley-rd., u.t. 95 yrs., g.r. 26*l.* 5s. 1,005

April 1.—By ARTHUR BARTON.

Lee.—76, 86, 100, 102, 104, 106, and 164, Burnt Ash-hill, u.t. 67 yrs., g.r. 60*l.* 14s. 3,100

Burnt Ash-hill, "Point View," u.t. 67 yrs., g.r. 14*l.*, r. 87*l.* 10s. 800

2, 3, 4, 5, 6, and 9, Bromley-rd., u.t. 67 yrs., g.r. 45*l.*, r. 197*l.* 1,615

94, Burnt Ash-hill, u.t. 67 yrs., g.r. 12*l.* 10s..... 750

By FRANCIS & CO.

Clapham.—101, Larkhall-rise, u.t. 36 yrs., g.r. 22*l.*, r. 85*l.* 470

By FURBER, PRICE, & FURBER.

Bromley-by-Bow.—Devons-rd., i.g.r. 76*l.* 19s., u.t. 64 yrs., g.r. 21*l.* 15s. 925

Bloomsbury.—Doughty-st., a profit rent of 21*l.* 12s. for 7 yrs. 100

St. John's Wood.—21, Alexandra-mews, u.t. 60 yrs., g.r. 3*l.*, r. 26*l.* 205

Finsbury-pk.—Clifton-ter., f.g.r. 12*l.*, reversion in 70 yrs. 350

Rotherhithe.—1 to 10, Beatson-st., area 11,297 ft., f., r. 40*l.* 830

By W. B. HALLETT.

Holloway.—367 and 369, Camden-rd., u.t. 34¾ yrs., g.r. 10*l.* 1,365

By H. G. POTTER.

Hampstead.—45, Rosslyn-hill, u.t. 54 yrs., g.r. 7*l.*, r. 75*l.* 710

By G. J. ROBINSON (at Northallerton).

Brompton, Yorks.—"Standard Hill Farm," 64 a., f. 1,115

April 2.—By STEPHENSON & ALEXANDER (at Cardiff).

Cardiff, Glamorgan.—The Cardiff Tin Stamping and Enamel Works, area 2 a. 2 r. 12 p., u.t. 89 yrs., r. 330*l.*, with goodwill, plant, machinery, &c. 15,000

Rumney, Mon.—"Tydu Farm," 15 a. 0 r. 17 p., c. 1,540

Two freehold cottages, r. 18*l.* 475

By WRIGHT & SCRUBY (at Cambridge).

Harlton, Cambs.—"The Maypole Farm," 79 a. 1 r. 34 p., f. 1,600

April 4.—By BONHAM & SONS.

Surbiton.—Ditton-rd., "Ecclesholme," and two plots of land, f. 835

By WOOTON & GREEN.

Hornsey.—2 to 12 (even), Hillfield-av., u.t. 93½ yrs., g.r. 45*l.*, r. 240*l.* 2,720

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PRICES CURRENT OF MATERIALS.

TIMBER.

Greenheart, B.G.	ton	8/0/0 0/0/0
Teak, E.I.	load	9/0/0 14/0/0
Sequoia, U.S.ft.cu.		1/8 1/10
Ash, Canada, load		2/7/6 3/12/6
Birch, do.		2/10/0 4/2/6
Elm, do.		3/2/6 4/2/6
Fir, Dantsic, &c..		1/11/0 3/11/0
Oak, do.		2/3/0 3/3/0
Canada		2/15/0 5/0/0
Pine, Canada red		0/0/0 0/0/0
Do. yellow		2/5/0 4/5/0
Lath, Dantsic, fath		4/10/0 5/10/0
St. Petersburg..		5/0/0 6/10/0
Wainscot, Riga, &c., log		3/15/0 5/10/0
Odessa, crown		3/15/0 5/10/0
Deals, Finland		
2nd & 1st std	100	8/0/0 8/10/0
Do. 4th & 3rd	..	8/0/0 8/10/0
Do. Riga		6/10/0 7/10/0
St. Petersburg, 1st yellow		10/0/0 12/10/0
Do. 2nd yellow.		9/0/0 10/10/0
Do. white		8/10/0 10/10/0
Swedish		9/0/0 15/0/0
White Sea		9/10/0 16/0/0
Canada, Pine 1st		19/5/0 25/5/0
Do. do. 2nd		13/15/0 16/5/0
Do. do. 3rd, &c.		6/5/0 9/15/0
Do. Spruce, 1st		10/5/0 11/15/0
Do. do. 3rd and 2nd		7/15/0 8/15/0
New Brunswick		6/15/0 7/15/0
Battens all kinds		5/0/0 18/0/0
boards, sq., 1 in. prep.		
1st		9/0 16/6
Do. 2nd		7/6 13/0
Other qualities—		6/0 7/0
Cedar, Cuba,	ft.	¼ ¼
Honduras, &c.		⅜ ¼
Mahogany, Cuba		⅝ ⅞
St. Domingo, cargo av.		¼ 0/2/3
Mexican, do. do.		⅜ ¼
Tobasco, do. do.		¼ ⅝
Honduras, do.		¼ ⅝
Box, Turkey,	ton	4/0/0 15/0/0
Rose, Rio		7/0/0 14/0/0
Bahia		6/0 0 12/0/0
Satin, St. Doming.		0/0/5 0/1/0

TIMBER *(continued)*.

Satin, Porto Rico	0/0/6	0/1/6
Walnut, Italian ..	0/0/3	0/0/7

METALS.

Iron—Pig, in Scotland	ton	2/6/1½ 2/6/4½
Bar, Welsh, in London		5/15/0 5/17/6
Do. do. at works in Wales		5/10/0 5/12/6
Do. Staffordshire, in London		6/5/0 7/10/0
COPPER — British cake and ingot		£5/0/0 55/10/0
Best selected ..		55/15/0 56/5/0
Sheets, strong..		62/0/0 0/0/0
Chili bars		51/2/6 0/0/0
YELLOW MTL. lb.		5d. 5½d.
LEAD — Pig		
Spanish	ton	13/0/0 0/0/0
English com. bands		13/5/0 0/0/0
Sheet, English 6 lbs. per sq. ft. and upwards ..		14/5/0 0/0/0
Pipe		14/15/0 0/0/0
ZINC — English sheet	ton	20/5/0 0/0/0
Vieille Montagne		21/10/0 0/0/0
Spelter		18/10/0 18/12/6
TIN—Straits		65/5/0 0/0/0
Australian		65/10/0 66/0/0
English Ingots..		67/10/0 68/10/0
Banca		61/0/0 0/0/0
Billiton		59/15/0 60/2/0

OILS.

Linseed	ton	15/7/6 0/0/0
Cocoanut, Cochin		27/15/0 0/0/0
Do. Ceylon		22/0/0 0/0/0
Palm, Lagos		21/15/0 0/0/0
Rapeseed, English pale		27/10/0 0/0/0
Do. Brown		26/0/0 0/0/0
Cottonseed ref.		14/5/0 15/5/0
Oleine		13/10/0 14/10/0
Lubricating U.S.		0/5/3 0/7/6
Do. Black		0/5/0 0/6/6
TAR — Stockholm	barrel	1/0/0 0/0/0
Archangel		0/12/6 0/0/0
Turpentine		24/-/0 0/0/0

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 10 a.m. on Thursdays.* N.B.—We cannot publish Tenders unless authenticated by the name and address of the sender; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under £100, unless in some exceptional cases and for special reasons.]

ABERGAVENNY.—For the erection of a Welsh Presbyterian church, &c, Llanover. Mr. B. J. Francis, architect, Abergavenny. Quantities by architect:—

H. Smith	£1,424 0	Jno. Morgan	£1,240 0
Lewis & Co.	1,422 0	T. G. Foster, Abergavenny (accepted)	1,190 0
Morgan & Evans	1,427 7		
Thomas & Sons	1,245 0		

BIRMINGHAM.—For paving, kerbing, &c, Priory-road, for the Aston Manor Urban District Council. Mr. H. Richardson, C.E., Council House, Aston Manor:—

Jones & Fitzmaurice	£1,053 10 0	G. Trentham	£870 0 0
Currall & Lewis	952 11 8	W. & A. Heaps, Nechells Park-road, Birmingham*	796 16 8
J. Biggs	952 16 8		
G. Law	947 17 6		

* Accepted.

BRADFORD.—Accepted for additions to schools, Oakenshaw. Mr. J. W. Broughton, architect, 19, High-street, Skipton:—

Masonry.—E. Pearson, Wyke, Bradford
Joinery.—J. Priestley, Oakenshaw, Bradford
Plumbing.—W. T. Haley, Scholes, Bradford
Plastering.—J. Maw, Oakenshaw, Bradford
Slating.—S. Slater, Low Moor, Bradford
} £436

BRIGHTON.—For the construction of two covered reservoirs, Patcham, for the Town Council:—

Field & Co.	£9 365	Cooke & Co., 16, Victoria-street, Westminster, S.W. (accepted)	£7,419
Holman & Co.	8,557		
Sattin & Evershed	8,254		

CONNEL FERRY (N.B.).—For the erection of a villa residence, for Mr. D. MacGregor. Mr. W. MacKenzie, architect, 42, Stevenson-street, Oban. Quantities by architect:—

Joinery.—D. & A. Munn	£400 0 0
Building.—James Stevenson	376 0 0
Building.—Connel & Fraser*	339 17 6
Joinery.—J. & A. McDougall*	257 15 0
Plumbing.—Anderson & Nisbet*	98 12 0
Slating.—Donald Jeamison*	48 0 0
Plastering.—James Gorrie*	43 18 0
Bell Hanging.—John Campbell*	4 16 0

* Accepted.
[All of Oban.]

GULLANE (N.B.).—For the construction of outfall sewer. Messrs. Belfrage & Carfrae, C.E., 1, Erskine-place, Edinburgh:—

A. Brunton & Son	£1,254 3 0	G. Mackay & Son	£967 19 9
A. Waddell & Son	1,125 5 0	Robert Marshall	961 9 0
L. & W. McDonald	1,102 13 6	Laurence Kelly	958 4 3
John Morris & Sons	1,045 9 6	Wm. Caragher	898 13 0
Richard Wallace	1,008 0 0	John Martin, Dunfermline*	890 15 0
J. Kendall	969 0 0		

* Accepted.

HUNTLY (N.B.).—For the execution of water supply works, for the Commissioners. Mr. Jas. Barron, C.E., 156, Union-street, Aberdeen:—

G. Rhind	£2,288	J. Wilson	£1,658
J. Adam & Co.	2,140	J. McConnachie	1,643
P. Stewart	1,811	J. Hunter Clark, Richmond-place, Elgin*	1550
J. Smith	1,782		
P. Bisset & Son	1,785		

* Accepted.

LANCASTER.—Accepted for the erection of a shop, Stirling road, for the Co-operative Society, Limited. Mr. J. Parkinson, architect, 67, Church-street, Lancaster. Quantities by the architect:—

Masonry.—T. Mawson	£489 12 0
Joinery.—Wright & Sons	212 15 0
Slating.—T. Till	70 17 0
Plumbing.—Rushton & Pinch	73 12 4
Painting.—J. Taylor	25 12 0

[All of Lancaster.]

LANCASTER.—Accepted for rebuilding the "Nag's Head" Hotel and three shops. Mr. J. Parkinson, architect. Quantities supplied:—

Masonry.—Robert Thompson	£1,760 0
Joinery.—Wright & Sons	800 0
Slating and Plastering.—Hall & Son	365 14
Plumbing and Glazing.—Harrison & Moser	286 12

[All of Lancaster.]

LANGPORT (Somerset). — For the construction of covered reservoir, &c., for the Rural District Council. Messrs. Bailey Denton, Son, & Lawford, C.E., Palace-chambers, Westminster, S.W.:—

Meredith	£2,455 14 11	Poole	£1,794 0 0
Lott & Waine	2,484 17 4	Thomas & Webb	1,785 3 10
Hole	2,659 3 0	Hawking & Best	1,656 17 1
Roberts	1 932 16 0	Catley	1,630 0 0
Lydford	1,843 18 0	Smith & Son	1,528 10 7
Jackson	1,798 16 4	Willis & Sons, Bath*	1,494 18

* Accepted.

LINCOLN.—For reconstructing bridge, Kettleby Beck. Mr. Jas. Thropp, County Surveyor, 29, Broadgate, Lincoln:—

Hipwell	£506 0 0	C. Clark	£283 13 6
Sands	390 0 0	F. Sutton, Market Rasen (accepted)	230 0 0
S. & R. Horton	354 4 11		

LONDON.—For the extension of the Electric Light Generating Station in rear of No. 57, Fulham Palace-road, Hammersmith, W., for the Vestry of the Parish of Hammersmith. Mr. Hugh Mair, C.E., Vestry Surveyor, Town Hall, Hammersmith. Quantities by Mr. Walter Herring, Trafalgar-buildings, Northumberland-avenue, W.C.:—

Marchant & Hirst	£3,835 0 0	H. Wright	£3,635 0 0
C. Gray Hill	3,785 0 0	B. E. Nightingale	3,510 0 0
William Whiteley	3 759 5 11	T. W. Thomas	3,504 0 0
Geo. Wimpey & Co.	3,656 0 0		

LONDON.—For pulling down and rebuilding the Somerville laundry, Peckham-grove, for Mr. Reynolds. Mr. J. Warne, architect:—

Parker	£1,553	Coates	£1,243
Simpson & Cove	1,298	King	1,198

LONDON.—For painting and decorating 23, Lancaster-gate, Hyde Park, W. Messrs. Mullett, Booker, & Co., surveyors:—

G. Taylor	£1,318 0	Alden & Davis	£1,205 0
Campbell, Smith, & Co.	1,284 0	W. McSwiney	1,2021
Kinnimont	1,274 0		

LONDON.—For pulling down and rebuilding 27, Hare-street, Woolwich, for Mr. Geo. Jackson. Messrs. Church, Quick & Whincop, architects :—

Gadd	£1,459	Kitley	£1,358
Holloway	1,397	Chapman	1,309
Munday & Sons	1,395	Thomas & Edge*	1,283
Proctor	1,379		

* Accepted.

LONDON.—For the construction of an underground convenience for the Plumstead Vestry. Mr. W. C. Gow, C.E., Surveyor :—

Doulton & Co.	£2,417	E. Proctor	£2,385
C. Foreman	2,393	Thomas & Edge	2,335

LONDON.—For the erection of house and stables at West Hill, Putney Heath, S.W., for Mr. F. Faulkner. Mr. R. J. Thomson, architect, 64, Hill-road, Wimbledon. Quantities by Mr. A. Boxall, 8, Adam-street, Adelphi, W.C. :—

Lathey Bros.	£5,420	Holloway Bros.	£5,129
Minter & Co.	5,280	W. Johnson & Co.	5,050
Smith & Sons	5,273	Lorden & Son	4,939
Adamson & Sons	5,263	Bulled & Co.*	4,497

* Accepted.

LONDON.—For alterations and additions to shop premises, Nos. 199 and 201, Lewisham High-road, S.E., for Messrs. Haycraft & Son, Limited. Mr. John Jas. Downes, architect, 199, Lewisham High-road, S.E. :—

S. J. Jerrard & Son	£1,070	T. D. Leng	£1,038
H. L. Holloway	1,062		

LONDON.—For the erection of dairy, stables, &c., at No. 2, Springbank-road, Hither Green, S.E., for Messrs. Abbott Bros., Limited. Mr. John Jas. Downes, architect, 199, Lewisham High-road, S.E. :—

Covill	£450	J. Lawrence	£390
W. Nash	395		

MAESTEG (Wales).—For the conversion of Plasnewydd House into a school for the higher standards, for the School Board of Maesteg. Mr. E. W. Burnett, architect, Tondu :—

W. Francis	£1,777	Rattray & Jenkins, Pontycymmer*	£1,551
P. Gaylard	1,635		
E. Evans	1,630		

* Accepted.

MANCHESTER.—For paving, sewering, &c., Bannister-street and Taylor's-road, for the Stretford District Council. Mr. Royle, Surveyor, Council's Offices, Old Trafford :—

Geo. Boyson, Ashton-on-Mersey*		Schedule of Prices.
Worthington & Pownall, Manchester		
W. Naylor & Sons	do.	
Geo. Clarke & Son	do.	
Wm. Clarke	do.	
W. J. Wilkinson, Pendleton		

* Accepted for each street.

MORECAMBE.—For the erection of a house and shop, Yorkshire-street, West End, for Mr. W. H. Burrow. Mr. Jas. Marshall, architect, Back-crescent, Morecambe :—

Masonry.—Nicholl & Son, Rochdale	£355	0	0
Joinery.—Schofield, Morecambe	233	15	8
Slating and Plastering.—W. J. Cross, Morecambe	79	14	0
Plumbing and Glazing.—R. B. Abbott, Morecambe	66	0	0

MORLEY (Yorks).—For the erection of two houses, Park-parade. Mr. T. A. Buttery, architect, Queen-street, Morley :—

Masonry.—D. Furness	£480	0	0
Joinery.—D. Furness	210	0	0
Plumbing.—J. W. Stakes	44	0	0
Plastering.—E. Wilson	68	0	0
J. Atkinson & Son	43	12	

[All of Morley.]

PETERBOROUGH.—For the erection of a house at the steam laundry, Park-road. Mr. J. G. Stallebrass, architect, North-street, Peterborough :—

Wenlock	£419	0	0
J. W. Reeve	415	10	0
Watson & Lucas	388	0	0
Hicks Bros.	387	13	7
Nichols	£387	0	0
Gray	380	0	0
Sibley Bros.*	380	0	0

* Accepted.

[All of Peterborough.]

PETERBOROUGH.—For additions, &c., to schools, Newborough, for the manager. Mr. J. G. Stallebrass, architect, North-street, Peterborough :—

Hipwell	£753	Nichols	£615
Aspittle & Neaverson	624	Pine & Letall, Peterborough*	598

* Accepted.

SWINDON.—For the erection of two pairs of semi-detached villas, The Sands, for Mr. T. H. Deacon. Mr. W. H. Read, architect, Corn Exchange, Swindon :—

T. Barrett	£2,751	0	
Colborne & Son	2,680	0	
J. Williams	2,674	10	
Hunt	£2,496	0	
E. Cowley	2,480	0	
J. Lay	2,379	0	

SWINDON.—For alterations and additions to Nos. 19 and 21 Wood-street, Swindon. Mr. W. H. Read, architect, Corn Exchange, Swindon :—

C. Williams	£346	0	
Barrett	341	0	
J. Williams	329	0	
Lay	£299	10	
J. Day	275	0	

[All of Swindon.]

SWINDON.—For the erection of an assembly room, &c., Bridge-street. Mr. R. J. Beswick, architect, 9, Regent-street, New Swindon :—

J. Hatherly	£1,937	Wm. Chambers, Ashford-road, Swindon*	£1,695
Flewelling & Huckson	1,850		

* Accepted.

WALTHAM CROSS.—For the erection of houses on the Colvin Estate, for Mr. R. B. Colonl. Mr. F. W. Adams, architect, Finsbury Circus Buildings, 18, Eldon-street, E.C. :—

Yerbury & Sons	£12,000	Almond & Sons*	£8,705
Wm. Gardener	9,000		

* Accepted.

WESTON-SUPER-MARE.—For the erection of two shops, &c., for the Urban District Council. Messrs. Price & Wooler, architects, 15, Waterloo-street, Weston-super-Mare :—

H. W. Pollard	£4,155	0	
Keen & Keen	3,688	0	
H. A. Forse	3,250	0	
Chas. Addicott, Weston-super-Mare*	£3,744	10	

* Accepted.

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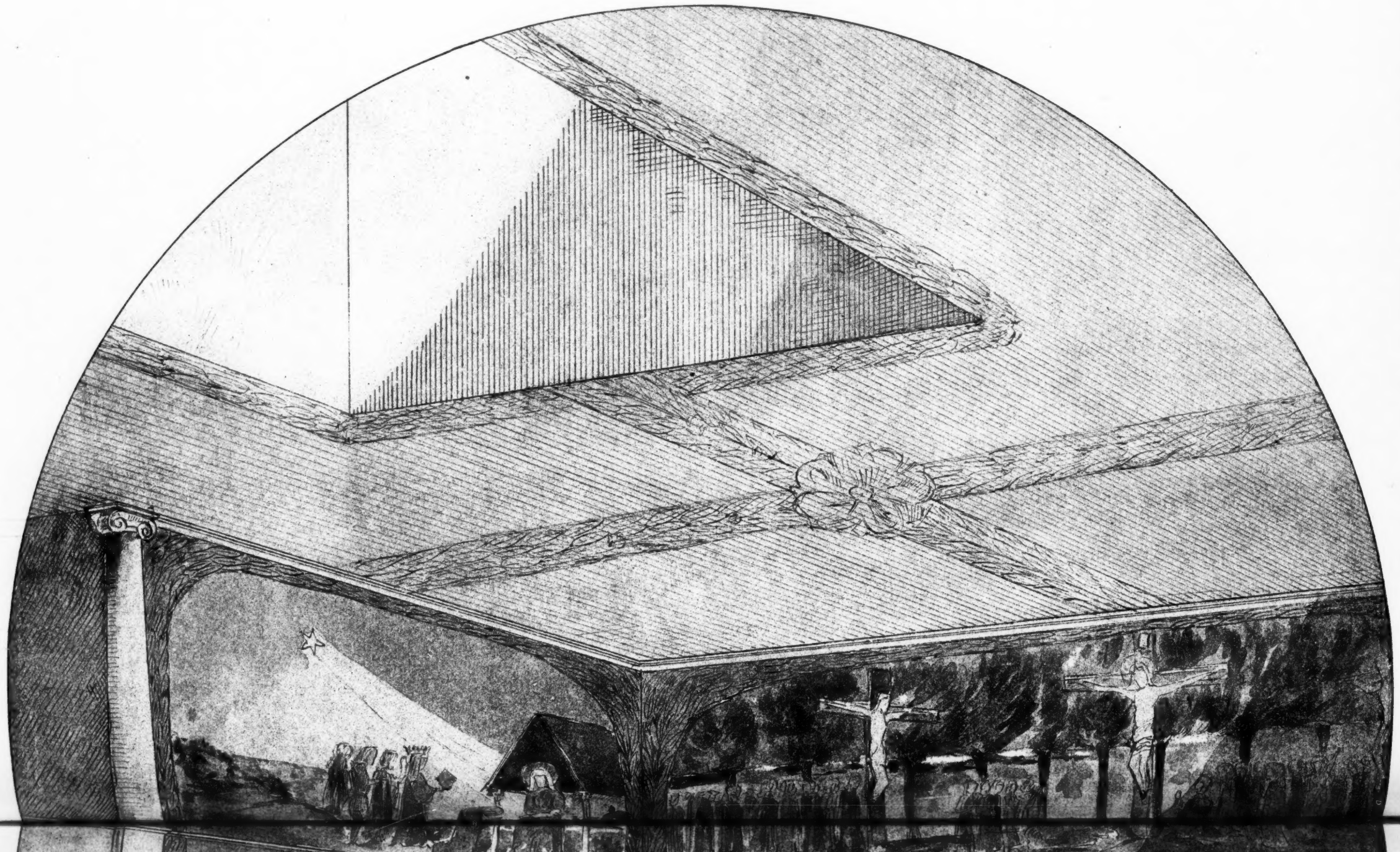

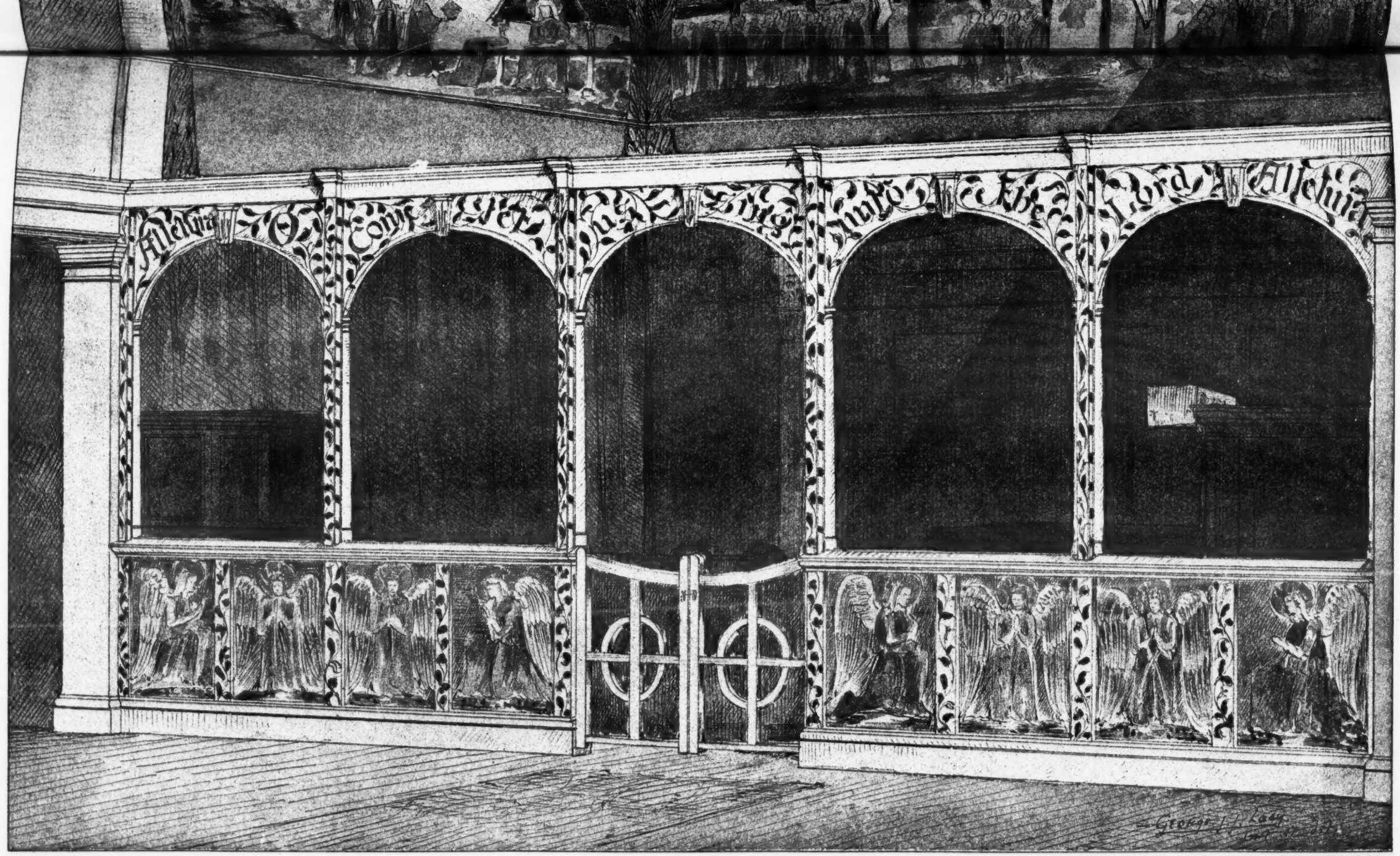

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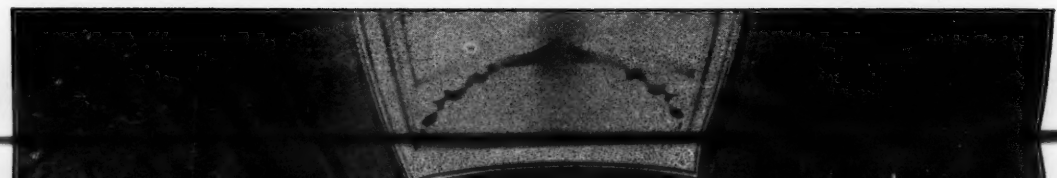

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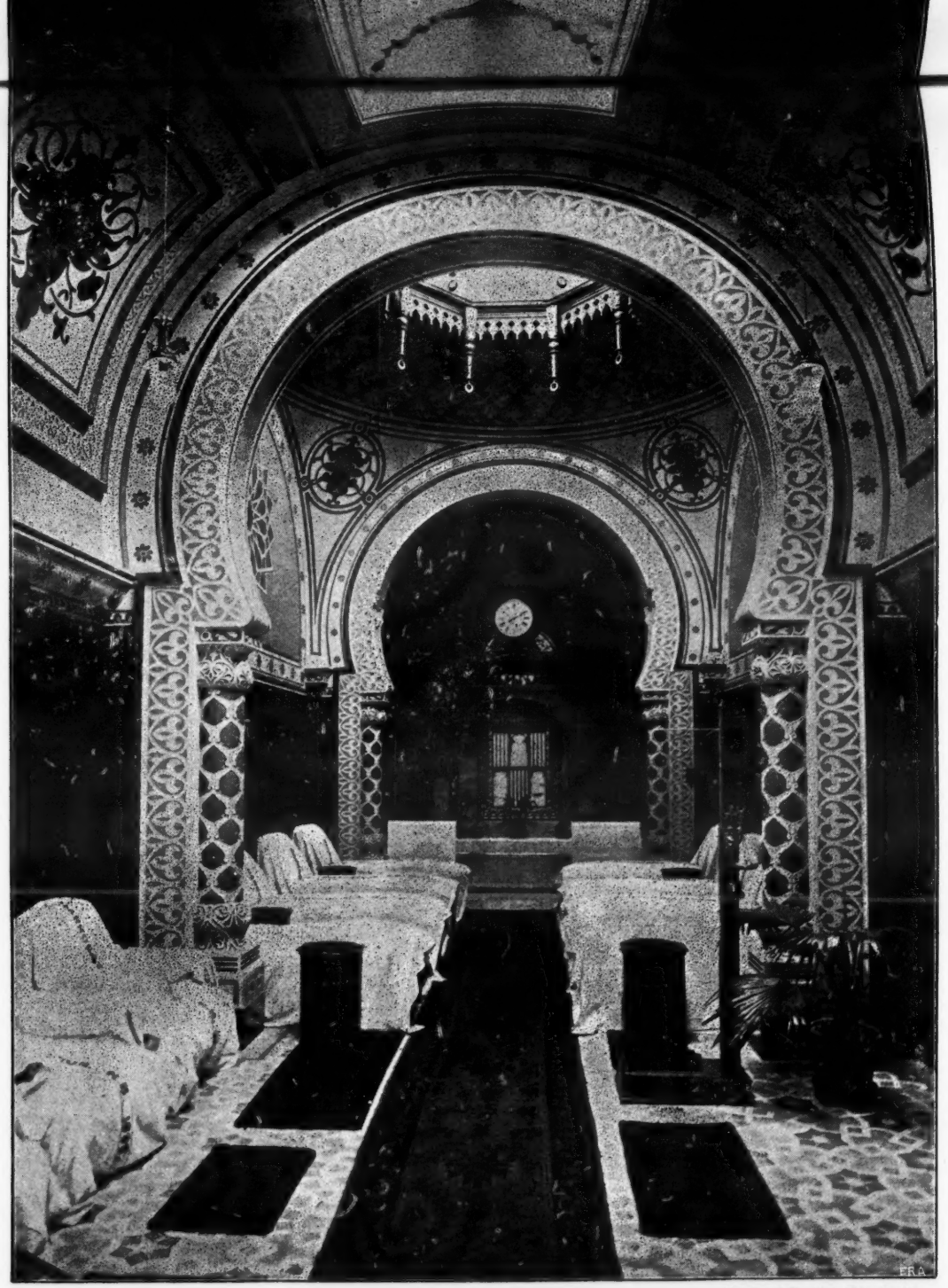

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